



APOLLO
NII PERGEI PHI
LOSOPHI, MATHEMA-
TICIQVE EXCELLENTISSIMI

Opera, Per Doctiſſimũ Philoſophum
Ioannem Baptiſtam Memum Pa-
tritium Venetum, Mathemati-
charumq; Artium in Vrbe
Veneta Lectorem Publi-
cum. De Græco in La-
tinum Traducta.
& Nouiter Im
preſſa.

Cum Summi Pontificis Senatusq; Veneti Priuilegio.





43. B. 8.

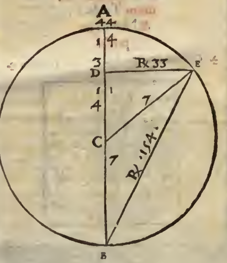


REVERENDISSIMO D. D. MARINO GRIMANO T. S. MAR-

celli. S. R. E. P. Cardinali Patriarcha Aquileienſi, Peruſiæ, Vmbriæq; de

Latere Legatus. Ioannes Maria Memus. P. Venetus. S. D.

LABORES, *Opera, lucubrationes, ſub nomine alicuius, cui maxime deberent, qui & ipſa ætate virtute, doctrina, authoritate præ cæteris floruiſſet, in lucem, perinde ac proprios fœtus, antiqui authores edebant, Præſul optime, Reuerendiſſime, quòd amoris, beneficiiq; accepti vices, quo poſſent officio, rependerent, gratesq; referrent; quòd & eorum dogmata edita ſub hominum grauiorum authoritate, & eorum illuſtrium, plus, neſcio quo pacto, ſecum ferre æſtimationis viderentur. Itaq; cum poſt obitum Ionnis Baptiſtæ Memi patrui mei, viri & ſi in omni ſcientiarum genere eruditiſſimi, Mathematicarum tamen huius ætatis facile principis, vti non ego tantum, qui ne pos, non vniuerſa modo Italia, verum exteræ quoq; gentes, & remotiſſime, communi omnium fama, conſentiunt, Bibliothecam ipſius diſcurrerem, Apollonius Pergeus, Mathematicus inter græcos author grauiſſimus, ab ipſo patruo meo extrema ſua hac ingraueſcente ætate, quaſi alter Cato, literas græcas didicerat, latinitate donatus, in manus noſtras inciderit: decreui, ne tam ſingularis fœtus, tamdiu abditus, tam ſtudioſis neceſſarius, licet immaturus adhuc, & præcox, aborteretur, atq; fatiſceret, eu ipſum, ex ipſo quaſi matris vtero cæſo, perinde ac Cæſarem alias, & Manlium, & Africanum, excerpere, tibi dicare, ſub feliciſſimoq; nomine tuo publice cudendum tradere: cum nullus ſit, cui ob innumera, ingentiaq; erga me beneficia, humanitatem, clementiam, magiſq; tibi debeam: qui hoc æuo, hac inclyta vrbe maiori virtute, maiori authoritate floreat, quàm tu ſacerrime Antiſtes: quem vnum noſtræ ipſius Ciuitatis, quinimmo noſtrorum temporum doctrina, integritate, induſtria, ſplendore, liberalitate, gratia, omnium iudicio, præſtantiſſimum dixerim. Suſcipe igitur ſolita clementia, tibi à me tanti authoris emanatum munus, vt meam in te præcipuam beneuolentiam, conteſtetur; deuotionem, obſeruantiam, quaſq; poſſum tibi gratias nomine meo referat; vt Pergeus ipſius patrui mei ſtudio vitæ reſtitutus, tuo fauore in lucem editus tuis ſtudiis cæterum inſeruiat, tecum feliciter vitam agat, ſcientiarum demum cultores omnes tibi perpetuo debeant.* Vale.



APOLLONII PERGEI

PHILOSOPHI. MATHEMATICIQVE EXCEL lentiſsimi Opera. Per doctiſsimum Philoſophum Ioannem Baptiſtam Memium, Patricium Venetum. Mathematicarumq; Artium in Vrbe Veneta Lectorem publicum. De Gręcho in Latinum Traducta.

Apollonii Pergæi Conicorum Primum.

APOLLONIVS EVDEMO SALVTEM. SI corpore bene vales, & alia ſm mentem tibi ſunt, bene ſe habet: mediocriter valemus & nos, Tempore quo eramus tecum in Pergamo, vidi te cupientem participare ex conicis a nobis compoſitis, Miſi igitur tibi primum librum, cum eum recte correxerim reliqua uero quando expleuerimus, mittemus: Non enim te oblitum puto eorum, quæ a me audiuiſti? quare ingreſſum quendam ad hæc fecimus rogatus a Naucrate Geometra ex illo tempore quo vacauit apud nos profectus Alexandream. & ideo componentes ipſa in octo libros ex ipſa partiti ſumus ea in diligentius quid, propter idem eſſe quo ad perfectionem non diligenter percutentes, ſed omnia incidentia nobis ponentes tanquam ad vltimum peruenire cupientes vnde tempus nunc accipientes. contingentem correctionem damus: & quoniam contingit & alia quędam dictorum a nobis mutare & primum & ſecundum librum corrigere ne admireris ſi incidas his aliter fortaſſe ſe habentibus, ab octo autem libris primi quattuor ceciderunt in Elementarem educationem: Continet aut primus quidem generationes trium dimenſionum & oppoſitorum, & in ipſis principalia accidentia vtplurimum generaliter magis dęſcripta, præter, ea quæ ab aliis compoſita ſunt. Secundus, Accidentia circa Diametros & axes ſectionum & concidentes, & alia generalem & neceſſariam vtilitatem præbentia ad diuiſiones, quaſdam autem Diametros, & quaſdam axes voco peritiam ex hoc libro. Tertius multa & mirabilia Theoremata vtilia & ad compoſitiones ſolidorum locorum, & diuiſiones, quarum plurima & pulcherrima noua ſunt: quæ conſiderantes cognouimus non eſſe poſitum ab Euclide locum ſuper tres aut quartuor lineas, ſed particulam contingentem ipſius, & hanc non fœliciter, Non enim erat poſsibile ſine inuentis a nobis perficere poſitionem. Quartus autem quotupliciter conorum ſectiones, inuicemq; & circuli circũferentia confligant, & alia ex ſuperfluo quorum nullus ex prioribus ſcripſit, Coni ſectio vel circuli circũferentia quot puncta ſuſcipiant, reliqua vero ſunt de Elementarii ſubſtantia. Eſt enim illud quidem de minimis & maximis vtplurimum,

Aliud de equalibus & ſimilibus Coni ſectionibus. Aliud de diuiſis propoſitinibus/ De problematibus conicis. Sed & omnibus manifeſtis exit volentibus inquirere ipſa: ut ipſorum ſingulus demonſtrat. Vale.

DIFFINITIONES PRIMÆ.

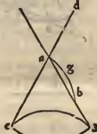
SI A QVODAM puncto ad circũferentiam circuli, qui non eſt in eodem plano in quo punctum eſt, linea coniuncta in alteram partem protrahantur, et manente puncto linea ducta circa circuli circumferentiam in idem rurſus reſtituatur, vnde dictum eſt duci. Scriptam ſuperficiem ſub linea quæ componitur ex duabus ſuperficiebus ſm ſumitatem inuicem poſitis / quarum vtraq; infinitum augetur, ſcripta linea in infinitum protracta, voco ſuperficiem conicã. Sumitatem vero ipſius punctum dictum. Axim autem lineam ductam per punctum & Centrum circuli. Conum autem contentam figuram a Circulo & Conica ſuperficie inter ſumitatem & circuli circumferentiam. Sumitatem autem Coni punctum quod ſuperficiei eſt ſumitas. Axim autem lineam ductam a ſumitate ad centrum circuli. Baſim autem circulum. Conorum autem rectos voco ad rectos habentes baſibus axes. Scalenos autem non ad rectos habentes baſibus axes.

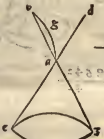
OMnis curuæ lineæ, quæ eſt in vno plano, Diametrum uoco lineam quæ ducta a curua linea omnes ductas in linea rectas lineas rectę cuidam equidiſtantes in duas partes diuidit. Sumitatem autem lineę terminus lineę rectę ad lineam deſcendens autem ſuper Diametrum diuiditur ſingula equidiſtantium. Similiter autem & duarum curuarum linearum in vno plano iacentium Diametrum voco. obliqua quę ſecans omnes lineas ductas in vtraſq; lineas prę̃ter quandam dupliciter lineam diuidit. Sumitates autem linearum terminos Diametri apud lineas. Rectam autem, quę poſita inter duas lineas omnes ductas equidiſtantes lineas lineæ cuidam, & receptas inter duas lineas dupliciter diuidit ducta autem ſuper Diametrum diuiditur ſingula equidiſtantium. Coniunctos voco Diametros duarum curuarum linearum lineas, quarum vtraq; Diameter exiſtens, equidiſtantes alii lineas dupliciter diuidat. Axim vero voco curuę lineę & duarum curuarum linearum, lineam, quę diameter exiſtens lineę vel linearum ad rectos ſecat equidiſtantes. Coniunctos autem axes curuę lineę vel duarum curuarum linearum, lineas quæ diametri coniunctæ exiſtentes, ad rectos diuidunt ad inuicem equidiſtantes.

¶ Propoſitio, Prima.

QVÆ a ſumitate conicæ ſuperficiei ducuntur lineæ, ad puncta quæ in ſuperficie ſunt, ſunt in ſuperficie.

¶Sit Conica ſuperficies, cuius ſumitas ſit. A. Punctum, & ſit in ſuperficie conica punctum. B. & ducatur linea. A. B. G. Dico ꝙ. A. G. B. linea eſt in ſuperficie, Si enim poſſibile non ſit, & ſit deſcribens ſuperficiem linea. d. e. Circulus autem per quem linea. D. e. ducitur ſit. e. z. Si manente puncto. a. linea. d. e. ducatur circa circuli. e. z. circūferentiam, deinde, & per pūctum. B. & erit duarum linearum iſdem termini: quod eſt abſurdum, non igitur ducta linea a puncto. a. ad. b. eſt extra ſuperficiem, eſt vtiq; in ſuperficie, & clarum eſt, ꝙ ſi a ſumitate ad punctum: quod ſit intra ſuperficiem ducatur linea cadet infra Conicam ſuperficiem, ſi vero ad punctum quod ſit extra ſuperficiem, erit etiam vtiq; linea extra ſuperficiem.



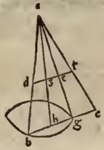


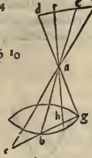
¶Propoſitio, Secunda.

SI in vtram igitur ſuperficiem ſm ſumitatem duo puncta ponantur, linea autem ſuper puncta iuncta non coincidat ſuper ſumitatem cadit intra ſuperficiem, ſi vero vltra lineam, extra:

¶Sit conica ſuperficies, cuius ſumitas punctum. a. circulus autem per quem fertur linea deſcribens ſuperficiens ſit. b. g. & ponantur in vtram ſuperficiem ſm ſumitatem duo puncta, d. e. & ducta. d. e. nō cadat ſuper. a. punctum, dico ꝙ. d. e. eſt intra ſuperficiē, & quæ eſt vltra lineam, extra. Ducantur lineæ. a. e. & a. d. & protrahantur, cadent quidem ſuper circuli ſuperficiem, cadant igitur ad. b. g. & ducatur. b. g. Erit vtiq; ſuper B. G. lineam, Triangulus enim. B. G. A. eſt in vno plano, Cadat igitur ad. H. quoniam igitur. h. eſt intra ſuperficiem conicam & a. h. vtiq; intra ſuperficiem conicam erit, quare & . z. intra ſuperficiem conicam eſt. Similiter etiam demonſtrabitur ꝙ omnia puncta infra. D. E. intra ſuperficiem conicam. D. E. igitur eſt ipſius ſuperficiei, producatur autem ad. t. dico ꝙ extra ſuperficiem conicam cadet.

Si enim poſsibile ſit.t.eſſe intra ſuperficiem conicam / ducatur.a.t. & protrahatur / cadet vtiq; aut ſuper circuli circũferentiam aut intra / quod eſt impoſſibile: cadit enim ſuper.b.g.productam vſq; ad.c.linea igitur.e.t.extra ſuperficiem eſt linea igitur.d.e.eſt intra ſuperficiem conicam / & quæ vltra eſt, extra.

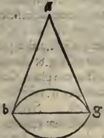




Propoſitio Tertia.

SI conus plano ſecetur, in ſumitate Sectio Triangulus eſt.

Sit conus / cuius ſumitas punctum.a.baſis autem.b.g.circulus / & ſecetur a quodam plano per punctum.a.& faciat ſectiones in ſuperficie lineas.a.b. &.a.g.& in baſi faciat lineam.b.g.dico q.a.b.g.Triangulus eſt.quoniam enim a puncto.a.ad.b.Iuncta cõmunis ſectio eſt diuidentis planum & ſuperficiei Conicæ / recta eſt linea.a.b.ſimiliter autem &.a.g.eſt etiam &.b.g.recta. Triangulus igitur.a.b.g. Si igitur conus plano ſecetur in ſumitate / ſectio Triangulus eſt.



ℭ Propoſitio,Quarta.

SI igitur vtra ſuperficies in ſumitate plano quodam ſecetur equidiſtanti circulo.per quem fertur linea deſcribens ſuperficiem/deſcriptus planus inter ſuperficiem circulus erit centrum habens in axi:contenta autem figura a circulo & a conica ſuperficie recepta a plano ſecante ad ſumitatem/conus erit.

ℭ Sit ſuperficies conica,cuius ſumitas punctum.a.circulus autem per quem fertur linea deſcribens ſuperficiem ſit.b.g.& ſecetur plano quodam/equidiſtanti circulo.b.g.& faciat in ſuperficie ſectionem lineam.d.e.dico ꝙ linea.d.e.circulus eſt in axi habens centrum.Sit enim centrum circuli.b.g.punctum.z.& ducatur.a.z.axis vtiꝗ eſt & tangatur a ſecanti plano/tangatur igitur in puncto.h. & proferatur quodam planum per a.z.eſt vtiꝗ ſectio triangulus.a.b.g.& quoniam puncta.d.h.e.ſunt in plano ſecanti/eſt autem & in plano.a.b.g.recta igitur eſt,d.h.e.ſit inſuper quodam punctum.t.in linea d.e.& iuncta.a.t.proferatur/occurret vtiꝗ circũferentię.b.g.occurrat igitur in puncto c.& ducantur.h.t.&.z.c.& quoniam duo plana equidiſtantia.ſ.d.e.&.b.g.a quodam plano.a.b.g.ſecantur cõmunes ipſorum ſectiones equidiſtãtes ſunt/equidiſtans igitur eſt.d.e.lineæ.b.g.propter eadem vtiꝗ &.h.t.equidiſtans.c.z.eſt igitur/vt.z.a.ad.a.h.ſic.z.b.ad.d.h.&.z.g.ad.h.e.&.z.c.ad.h.t.& ſunt tres.ſ.b.z.&.c.z.&.z.g.inuicem equales/& tres vtiꝗ.d.h.&.h.t.&.h.e.inuicem equales ſunt.ſimiliter etiam demõſtrabimus ꝙ & omnes lineæ ductæ a puncto.h ad lineam.d.e.inuicem ſunt equales,circulus vtiꝗ eſt linea.d.e.centrum habens in axi/& manifeſtum eſt.ꝙ contenta figura a circulo.d.e.& conica ſuperficie intercepta ab ipſo ad punctum.a.conus eſt.& demonſtrabitur.ꝙ communis ſectio plani ſecantis & trianguli per axim/Diameter eſt circuli.

℞.10 m̃ 1 co.
℞.10 m̃ 1 co.

℞.℞ 100 p̄ ꝗ m̃ 2090
1090.℞ 100 p̄ ꝗ m̃ 2090
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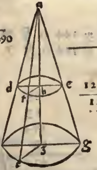
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10 m̃ 8

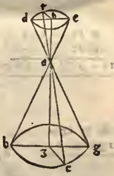
15 m̃.℞ 125
℞ 125 m̃ 5

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15 m̃.℞ 125
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125
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125
12500





℞ 125.m̃ 5
125.m̃ 5
150 m̃.℞ 12500

3125
4
12500

ℂPropoſitio,Quinta.

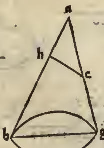
SI conus ſcalenus plano ſecetur per axim ad rectos baſi, ſecetur autem & altero plano ad rectos triangulo per axim,auferenti autem ad ſumitatē triangulum,ſimile quidem per axim triangulo.ſubcontrarieq́ʒ poſitum,ſectio circulus eſt,vocetur autem talis ſectio ſubcontraria.

ℂSit Conus ſcalenus:cuius ſumitas punctum.a.baſis autem.b.g.circulus,& ſecetur plano per axim,recto ad.b.g.circulum,& faciat ſectionē.a.b.g.triangulum:Secetur etiam & alio plano ad rectos exiſtenti.a.b.g.triangulo auferenti autem triangulum ad punctum.a.Triangulus.a.h.c.ſimile quidem triangulo.a.b.g.Subcontrarie autē poſitum, ideſt, quare equalem eſſe angulum ſub.a.c.h.angulo ſub.a.b.g. & faciat ſectionem in ſuperficie lineam.h.t.c.Dico ꝙ circulus eſt linea.h.t.c.ſint enim quædam puncta in lineis.h.t.c.&.b.g.& ſint.t.l.& a punctis.t.l.ad planum per.a.b.g.triangulum catheti ducantur.cadent vtiq́ʒ ad communes ſectiones planorū,cadant igitur vt.z.t.l.m.equidiſtans nempe eſt.z.t.lineæ.l.m.ducatur per.z.d.z.e.equidiſtans.b.g.eſt autem &.z.t.equidiſtans.l.m.planum igitur per.z.t.equidiſtat baſi coni,circulus igitur eſt non diameter linea.d.e.equale igitur quod ſub.d.z.&.z.e.illo quod fit ab.z.t.& quoniam equidiſtans eſt.d.e.lineæ.b.g.angulus.a.d.e.equalis eſt angulo ſub.a.b.g.& angulus ſub.a.c.h.angulo ſub.a.b.g. & angulus ſub.a.c.h.angulo ſub.a.d.e.eſt equalis, ſunt autem & ad punctum.z.anguli equales,ſecundum enim ſumitatem ſimile eſt triangulus.d.z.h.triangulo.c.z.e.eſt vtiq́ʒ vt.e.z.ad.z.c.ſic.z.c.ad.z.d.quod igitur ſub.e.z.&.z.d.illo quod ſub.c.z.&.z.e.equale eſt,ſed quod ſub.e.z.&.z.d. demonſtratum eſt equale illo,quod ab.z.t.fit,& quod ſub.c.z.&.z.h.equale eſt illo,quod ab.z.t.fit. Similiter demonſtrabitur ꝙ catheti omnes ab.h.t.c.linea ductæ ad.h.c.equum poſſe illo quod fit a ſectionibus.h.c.lineæ,Circulus igitur eſt ſectio non diameter.c.h.

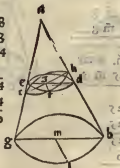
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18 m̃ ℞ 180
℞ 180 m̃ 6



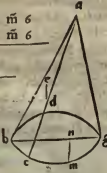
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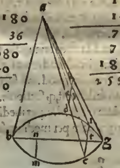
ℂPropoſitio, Sexta.

SI conus plano ſecetur per axim/relictumq; ſit quodam punctum in Coni ſuperficie, quod non ſit in latere trianguli per axim, & ab ipſo ducatur equidiſtás cuidam recte, quę eſt cathetus a circumferentia circuli ad baſim trianguli, coincidat triangulo per axim, & ducta vſq; ad alteram partem ſuperficiei per medium ſecabitur a Triangulo. Sit Conus/cuius ſumitas ſi punctum.a.baſis autem circulus b.g.& ſecetur conus plano per axim/& faciat ſectionem.a.b.g.circulum/& a quodam puncto eorum quę ſunt in ſuperficie.b.g.ſcilicet.m.ducatur cathetus. m.n.ad.b.g.relictumq; ſit in ſuperficie Coni punctum.d. & a puncto.d. ducatur.d.e.equidiſtans.m.n.Dico q.d.e.producta coincidet plano Trianguli.a.b.g. & producta ad alteram partem coni vſq; quo ſuperficiem eius tangat/per medium ſecabitur a plano Trianguli.a.b.g.coniungatur.a.g. & producatur, cadet ſuper ſuperficiem.b.g. circuli, cadat igitur ad.c.& a puncto.c.ad.b.g.cathetus ducatur.c.l.t.equidiſtans igitur eſt.c.t. lineę.m.n.&.d.e. igitur ducatur ab.a.ad.t.linea.a.t.quoniam igitur in triangulo.a.t.c.equidiſtans.d.e.eſt.t.c.producta ergo.d.e.tanget.a.t.Sed.a.t.eſt in plano.a.b.g.tanget igitur.d.e. planum trianguli.a.b.g.tangat igitur in.z.& ducatur.d.z.in rectũ vſq; quo tangat Coni ſuperficiem ad.h.dico q equalis.d.z.eſt.z.h.quoniam.A.h.l.puncta ſunt in ſuperficie coni,& in plano producto per.a.t.a.c.d.h.c.l.qđ per ſumitatem coni triangulus eſt. puncta igitur.a.h.l.in cõmuni ſunt ſectione ſuperficiei coni & Trianguli, recta igitur eſt.a.h.l.quoniã ergo in triangulo.a.l.c.ducta eſt.d.h.eq̄diſtans baſi.c.t.l.& ducta eſt ab.a.linea.a.z.t.eſt vt.c.t.ad.t.l.ſic.d.z.ad.z.h.equalis autẽ eſt.c.t.lineę.t.l.quoniam in circulo.b.g.cathetus eſt ſuper diametrum linea.c.l.equalis igitur &.d.z.lineę.z.h.

℞ 180 m̃ 6
℞ 180 m̃ 6
180
36
216



18 m̃ ℞ 180
12
216 m̃ ℞ 25920
180
36
1080
540
℞ 6480



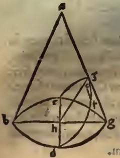
180
144
720
720
180
25920

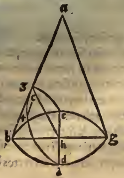
ℂPropoſitio, Septima.

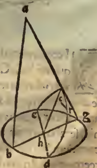
SI conus plano ſecetur per axim, ſecetur autem, & altero plano ſecanti planum, in quo eſt baſis Coni per rectam ad rectos exiſtentem vel baſi trianguli per axim, vel eidem in rectam, ductæ rectę a facta ſectione in Coni ſuperficie, quam fecit ſecans planum, equidiſtantes lineæ trianguli ád rectos baſi, ſuper Communem ſectionem cadent ſecantis plani, & trianguli per axim, & productę ad alteram partem ſectionis, ſecabuntur per medium ab ipſa. & ſi rectus eſt Conus, linea in baſi ad rectos erit communi ſectioni plani ſecantis, & trianguli per axim. ſi autem ſcalenus nõ ſemper ad rectos erit ſed quando planum per axim erit ad rectos baſi Coni.

PROPOSITIO VII.

Sit conus,ſumitas punctum.a.baſis autem.b.g.circulus & ſecetur plano per axim,& ſa
ciat ſectionem.a.b.g.triangulum,ſecetur autem & altero plano ſecanti planum in quo
eſt.b.g.circulus per lineam rectam.d.e.vel ad rectos exiſtentē.b.g.vel eidem in rectam
& faciat ſectionem in ſuperficie Coni.d.z.e.communis autem ſectio ſecantis plani,&
trianguli.a.b.g.linea.z.h.& relictum ſit quodam punctum in ſectione.d.z.e.& ſit.t.&
ducatur.t.c.equidiſtans.d.e.Dico q.t.c.coincidet.z.h.& producta ad alteram partem
ſectionis.d.z.e per medium ſecabitur a linea recta.z.h.quoniam Conus:cuius ſumitas
quidem punctum.a.baſis autem.b.g.circulus,ſecatur plano per axim,& facit ſectionē
a.b.g.triangulum,relictum eſt autem quodam punctum.t.in ſuperficie quod nō eſt in
latere trianguli.a.b.g.& eſt cathetus.d.h.ſuper.b.g.igitur per punctum.t.equidiſtans
d.h.ducta ideſt.t.c.coincidit triangulo.a.b.g.& producta vſq; ad alteram partem ſu-
perficici per medium ſecabitur a triangulo,quoniam igitur ducta per.t.equidiſtans.
d.e.coincidit triangulo.a.b.g.ſuper communem vtiq; cadet ſectionem ſecātis plani &
trianguli.a.b.g.Communis autem ſectio ſuperficierum eſt.z.h.ducta igitur per.t.equi
diſtans.d.e.cadet ſuper.z.h.& producta vſq; ad alteram partē ſectionis.d.z.e.per me-
dium ſecabitur,a,linea.z.h.vel conus rectus ſit,vel.a.b.g.triangulus per axim rectus ſit
ad.b.g.circulum,vel neutrum.Sit prius conus rectus,ſit igitur & triangulus.a.b.g.re-
ctus ad.b.g.circulum,cum igitur planum.a.b.g.ad planum.b.g.rectum ſit,Et commu
ni horum ſectioni.b.g.in vno planorum ſc3.b.g.ad rectos ducta eſt.d.e.Igitur.d.e.eſt
ad rectos triangulo.a.b.g.& ad omnes vtiq; ductas ipſius lineas & exiſtentes in trian
gulo a.b.g.recta eſt,igitur & ad.z.h.eſt ad rectos.Non ſit autem Conus rectus ſi igi-
tur triangulus per axim rectus eſt ad circulum.b.g.ſimiliter demonſtrabimus q.&.d.
e.eſt ad rectos.z.h.non ſit igitur triangulus per axim.a.b.g.rectus ad circulum.b.g.di-
co q.nec.d.e.eſt ad rectos.z.h.ſi enim poſsibile ſit,eſt autem &.b.g.ad rectos,igitur.d.
e.vtriq;.b.g.&.z.h.eſt ad rectos,& plano per.b.g.&.z.h.ad rectos erit planum autem
per.b.g.z.h.eſt.a.b.g.igitur &.d.e.eſt ad rectos.a.b.g.triāgulo & omnia per eandem
plana ſunt ad rectos triangulo.a.b.g.vnum autem planorum per.d.e.eſt.b.g.circulus
b.g.igitur circulus ad rectos eſt triangulo.a.b.g.quare & triangulus.a.b.g.rectus eſt
ad.b.g.circulum:quod non ſupponitur.Non igitur.d.e.eſt ad rectos.z.h.Ex hoc au-
tem manifeſtum eſt,q.ſectionis.d.z.e.Diameter eſt.z.h.quoniam ductas equidiſtan-
tes cuidam rectæ.d.e.per medium diuidit.& q.poſſibile eſt a Diametro.z.h.equidi-
ſtantes quaſdam per medium ſecari,& non ad rectos.







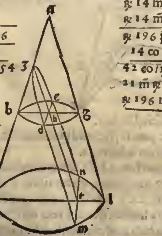
¶Propoſitio, Octaua.

SI conus plano ſecetur per axim, ſecetur autem & altero plano ſecāti baſim coni ꝑ rectā ad rectos exiſtentē baſi triāguli ꝑ axim: Diameter āt factę ſectiōis in ſupfi cię, vel ad vnū erit laterū triāguli, vel coincidet ipſi extra ſumitatē coni, ꝓducatᷣ autem & coni ſuperficies & ſecans planum in infinitum, & ſectio in infinitum augebitur, & a diametro ſectionis ad ſumitatem omni datæ lineæ equalem recipiet quædam linea ducta a ſectione coni ad lineam in baſi coni.

¶Sit conus, cuius ſumitas punctū.a. baſis āt circulus.b.g.& ſecetᷣ plano ꝑ axim, & faciat ſectionē.a.b.g.triāgulū, ſecetᷣ aūt & altero plano, ſecāti circulū.b.g. ꝑ rectā.d.e.ad rectos exiſtētem.b.g.& faciat ſectionē in ſupficie.d.z.e.linea, diameter āt ſectiōis.d.z.e.ſit.z.h.quę eqdiſtās ſit.a.g.vel ꝓducta ipſi coīcidet extra punctū.a. Dico ꝗ & ſi coni ſupficies, & ſecās planū producatᷣ in infinitū.&.d.z.e.ſectio in infinitū augebitᷣ.producatᷣ.n.coni ſupficies, & ſecās planū.clarū vtiq̧ ꝗ &.a.b.a.g.z.h.ꝓducētur, qm̄.z.h.vel eſt eqdiſtās.a.g.vel producta coincidet ipſi extra punctū.a.lineę igitᷣ.z.h.&.a.g.ꝓductę vſq̧ ad.g.h.ptes nunq̄ coincidēt.producātur igitᷣ & relictū ſit quodā punctū m.z.h.cōtingēs.t.& ꝑ punctū.t.ducatᷣ eqdiſtās.b.g.linea.c.t.l.ſed.d.e.eqdiſtās eſt.t.m.n.planū igitᷣ ꝑ.c.l.m.n.eqdiſtās eſt plano ꝑ.b.g.d.e. Circulus igitur eſt planū.c.l.m.n.& qm̄ pūcta.d.e.m.n.ſūt in plano ſecāti, eſt aūt & in ſupficie coni, Igitᷣ eſt in cōmuni ſectione.augebitᷣ vtiq̧.d.z.e.vſq̧ ad pūcta.m.n.aucta ergo ſupficie coni & plani ſecantis vſq̧ ad circulū.c.l.m.n.augebitᷣ & ſectio.d.z.e.vſq̧ ad pūcta.m.n. Similiter etiā demōſtrabimus ꝗ & ſi in infinitū ꝓducatᷣ & ſupficies coni, & planum ſecans, &.m.d.z.in ſectione in infinitū augebitᷣ & manifeſtū ꝗ omni datę lineę equalē recipiet quis a recta z.t.ad punctum.t.ſi.n.ponamus.x.z.equalem datę: & per.x.ducamus equidiſtantem d.e.coincidet ſectioni, queādmodum & per.t.demonſtratum eſt coincidens ſectioni per puncta.m.n.quare ducitur linea coincidens ſectioni equidiſtans exiſtens.d.e.recipiens ab.z.h.rectam equalem datæ ad punctum.z.

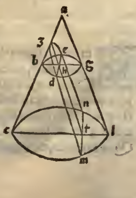
21 m̃ ℞ 196
14
294 m̃ ℞ 196
℞ 196 m̃ 7
245 p̃ ℞ 2454

14 m̃ 6
14 m̃ 6
℞ 232 p̃ 36



℞ 14 m̃ | co
℞ 14 m̃ | co
℞ 196 p̃ ʒ m̃ 28 co
14 co / ℞ 196 p̃ ʒ m̃ 28 co
42 co / ℞ 196 p̃ ʒ
21 m̃ ℞ 196
℞ 196 m̃ 7

12 p̃ ℞ 8
12 p̃ ℞ 8
℞ 80 m̃ ℞ 192

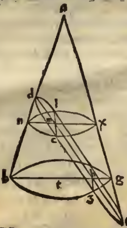


Propoſitio, Nona.

SI conus plano ſecetur coincidenti alterum latus trianguli per axim, neq; ad baſim ducto, neq; ſubcontrarie ſectio non erit circulus.

Sit conus cuius ſumitas punctū.a.baſis aūt circulus.b,g.& ſecetur plano quodam nō exiſtēti eqdiſtāti baſi,neq; ſubcōtrarie,& facit ſectionē in ſupficie lineā.d.c.e. Dico q.d.c.e.linea non erit circulus,Si.n.poſſibile ſit,& coincidat ſecās planū baſi, & ſit cōmunis ſectio planorū.z.h.centrū aūt.b.g.circuli ſit.t.& ab ipſo cathetus ducatur t.h.ſuper.z.h.& producat per.h.t.& axim planū, & faciat ſectiones in conica ſupficie lineas.s.b.a,/a,g,qm̄ igitur puncta.d.c.h. ſuper cōmunē ſectionē planorū ſunt,recta eſt ergo.d,c.e.relictum ſit quodā ſuper lineā.d.c.e.punctū.c.& ducat per.c./c.l.eqdiſtās,z.h.eritq;.c.m,equalis.l.m.diameter igitur,d.e,eſt circuli.d.m.l.c.ducat vtiq; per m.linea.n,m.x.equidiſtās b.g.eſt aūt.c.l.equidiſtās.z,h.quare planū per.n.x.c.m.equidiſtās eſt plano per.b.z.h.ideſt baſi,& erit ſectio circulus,ſit.n.c.x,& qm̄.z.h.eſt ad rectos.b.h,&.c.m.eſt ad rectos.n,x.quare quod eſt ſub.n.m.x.equū eſt illo quod fit ab c.m.circulus.n.ſubiicitur,d.c.e,l.linea,& diameter ipſius.d.e.quod eſt igit ſub.n.m.x. equū eſt illo quod eſt ſub.d.m.e.eſt vtiq; vt.m.n,ad.m.d.ſic.e.m.ad.m.x.ſimile igitur eſt.d m.n.triāgulus triāgulo.x.m.e,& āgulus ſub.d.m,n,equalis eſt āgulo qui ſub.m,e.x.Sed & āgulus ſub.d.n,m.equalis eſt angulo ſub.a,b,g.equidiſtans.n.eſt.n.x.lineæ b.g.igitur & angulus ſub.a.b.g.equalis eſt angulo ſub.e.m.x.ſubcontraria igitur eſt ſectio quod non ſubiicitur, non igitur circulus eſt linea,d.c.e.

16 m̄ 1 co
16 m̄ 1 co
℞ 196 p̄ ℥ m̄ 32 co
16 co / ℞ 256 p̄ ℥ m̄ 32 co
48 co / ℞ 256 p̄ ℥
24 m̄ ℞ 256
℞ 256 m̄ 8



℞ 24 m̄ ℞ 256
16 /
℞ 384 m̄ ℞ 4096
℞ 256 m̄ 8
℞ 256 m̄ 8
℞ 320 m̄ ℞ 1684

Propoſitio, Decima.

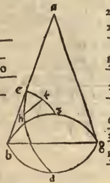
SI in coni ſectione relicta ſint duo puncta, recta ad puncta iuncta intra ſectionem cadet, quæ autem in rectam ipſius extra.

Sit conus, cuius ſuperficies punctum.a.baſis autem circulus.b.g.& ſecetur plano per axim & faciat ſectionem.a.b.g triangulum, ſecetur autem & altero plano,& faciat ſectionem in coni ſuperficie,lineam.d.e.z.& relicta ſint duo puncta.h.t.in.d.e.z.dico q iuncta linea ad.h.t.cadet intra lineam,d.e.z.ſi vero in rectam ipſi extra: Qu oniam conus,cuius ſumitas punctū.a,baſis autē circulus.b.g.ſecatur plano p axim,

relictaq;

relictaq; ſunt quædam puncta in eius ſuperficie ſcilicet.h.t.quæ non ſunt i latere triã guli per axim,& linea ducta ab.h.ad.t.non ad.a.Iuncta igitur ſuper.h.t. linea intra Conum cadet & in linea ipſi extra,quare & intra.d.e.z.ſectionem.

℞ 18 m̄ 1 co
℞ 18 m̄ 1 co
℞ 324 p̄ ꝙ m̄ 36 co
18 co/ ℞ 324 p̄ ꝙ m̄ 36 co
54 co/ ℞ 324 p̄ ꝙ
18 m̄ ℞ 729
℞ 729 m̄ 6
℞ 256 m̄ 8
℞ 196 m̄ 9



20 m̄ 1 co
20 m̄ 1 co
℞ 400 p̄ ꝙ m̄ 40 co
20 co/ ℞ 400 p̄ ꝙ m̄ 40 co
60 co/ ℞ 400 p̄ ꝙ
30 m̄ ℞ 400
℞ 400 m̄ 10

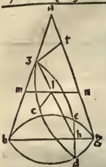
¶Propoſitio, Vndecima.

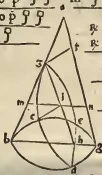
SI conus plano ſecetur per axim, ſecetur autem & altero plano ſecanti baſim coni per rectam ad rectos exiſtentem baſi trianguli per axim, Et diameter ſectionis equidiſtans ſit vni laterum triãguli per axim,quæ a ſectione coni equidiſtans ducta eſt communi ſectioni ſecantis plani,& a baſi coni vſq; ad diametrũ ſectionis poterit contentum ſub recepta ſub ipſa a diametro ad ſumitatem ſectionis,& alius cuiuſdã lineę, vel rationem habet ad eam quę inter coni angulum eſt & ſumitatem ſectionis, quam quadratum quod a baſi trianguli per axim ad cõtentum ſub reliquis duabus triã guli lateribus, Vocetur autem talis ſectio Parabole.

¶Sit Conus cuius ſumitas punctũ.a.baſis autem.b.g.circulus,& ſecetur plano per axim & faciat ſectionem triangulum.a.b.g.ſecetur autem & altero plano ſecanti baſim coni per rectam.d.e.ad rectos exiſtentem.b.g.& faciat ſectionem in ſuperficie coni.d.z.e. diameter autem ſectionis.z.h.equidiſtans ſit vni laterum trianguli per axim ſcilicet.a. g.& a puncto.z.ducatur.z.t.linea ad rectos.z.h.& faciat ut qđ ab.b.g.ad id quod ſub a.g.ſic.z.t.ad.z.a.& relictum ſit quodam punctum in ſectione contingens & ſit.c.& per.c.ducatur.c.l.equidiſtans.d.e.Dico q; id quod fit ab.c.l.equale eſt illo quod ſub.t. z.l.Ducatur.n.per.l.linea.m.n.equidiſtans.b.g.eſt autem &.c.l. equidiſtans.d.e.planum igitur per.c.l.m.n.equidiſtans eſt plano per.b.g.d.e.ideſt baſi coni &.c.l.eſt cathetus ſuper.m.n.quoniam &.d.e.ſuper.b.g.quod igitur ab.c.l.fit,equale eſt illo quod ſub.m.l.n.& quoniam eſt ut quod ab.b.g.ad id quod ab.b.g.a.ſic.t.z.ad.z.a.quod autem ab.b.g.ad id quod ab.b.a.g.rationem habet compoſitam,ex quo quem habet.b.g. ad.g.a.&.b.g.ad.b.a.Igitur ratio.z.t.ad z.a.componitur ex ratione.g.b.ad.g.a.&.g. b.ad.b.a.Sed ut.b.g.ad.g.a.ſic.m.n.ad.n.a.ideſt.m.l.ad.l.z.ut igiť.b.g.ad.b.a.ſic.m. n.ad.m.a.ideſt.l.m.ad.m.z.& reliquę.l.n.ad.z.a.Ratio igitur.z.t.ad.z.a.cõponiť ex ratione.m.l.ad.l.z.&.n.l.ad.z.a. Compoſita autem ratio ex ratione.m.l.ad.l.z.&.l.n. ad.z.a.quæ eius eſt qđ ſub.m.l.n.quæ eius eſt quod ſub.m.l.n.ad id quod ſub.l.z.a, ut igitur.t.z.ad.z.a. ſic quod ſub.m.l.n.ad id quod ſub.l.z.a.ut autem.t.z.ad.z.a.lineæ

z.l. communis altitudinis accepte,ſic quod ſub.t.z.l.ad id quod ſub.l.z.a.ut igitur quod ſub.m.l.n. ad id quod ſub.l.z.a.ſic quod ſub.t.z.l. ad id quod ſub.l.z.a. equale igitur eſt quod ſub.m.l.n.illo quod ſub.t.l.z. qđ autem fit ab.c.l.equale eſt eo,qđ ſub m.l.n.Igitur & qđ fit ab.c.l.equale eſt illo qđ ſub.t.z.l. Vocet̃ aũt talis ſectio parabole,t.z.aũt ad quam poſſunt ductæ ordinatæ ad.z.b.diametrũ. Vocetur& recta.

℞ 48 m̃ ℞ 121 ℞ 24 m̃ 1 co p̃ 9 ℞ 1643 m̃ 1 co
p̃ 9 m̃ 9 9 ℞ 24 m̃ 1 co p̃ 9 p̃ 9 m̃ 9 9
℞ 1463 p̃ 9 ℞ 576 p̃ 9 m̃ 48 co p̃ 9 9 m 9 9 p̃ 4
24 co / ℞ 576 p̃ 9 m̃ 48 co p̃ 9 9
72 co / ℞ 576 p̃ 9 9
℞ 576 m 9 9
℞ 464 m̃ 4
℞ 369 m̃ 6
p̃ 9 m̃ 1 co
℞ 1564 p̃ 8
℞ 233 p̃ 9



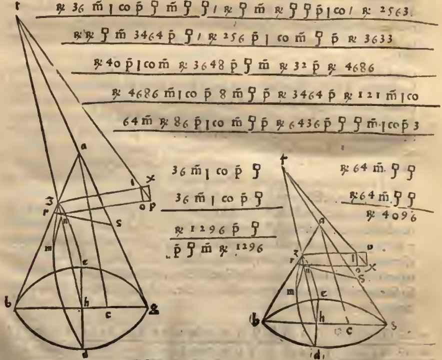


Propoſitio XII.

SI conus plano ſecet̃ per axim, ſecet̃ autem & altero plano ſecãti baſim coni per rectã ad rectos exiſtentẽ baſi trianguli p axim,& diameter ſectionis pductus coincidat vni laterum triãguli p axim extra coni ſumitatẽ,q̃ a ſectione ducta eſt eqdiſtãs cõmuni ſectiõi ſecãtis plani & baſi coni vſq ad diametrũ ſectionis poterit id qđ ſuperficies adiacẽs ad quãdã lineã ad quã rõnẽ habet in linea manẽs diametro ſectiõis tangẽſq angulũ extra triãgulũ quã quadratũ qđ fit adducta a ſumitate coni ad diametrũ ſectionis vſq ad baſim triãguli ad cõtentũ ſub baſi ſectionibus,quas fecit ducta latitudo habẽs receptã ſub ipſa a diametro ad extẽdẽs ſumitatẽ ſectionis ſpẽ ſimili & ſilr iacens cõtento ſub tangẽte extra angulũ triãguli & illius ad quã poſſunt ductę. Vocet̃ aũt hęc ſectio hyperbole.

Sit Conus cuius ſumitas punctum .a. baſis autem circulus .b.g. & ſecetur plano per axim & faciat ſectionem trianglum .a.b.g.ſecetur autem & altero plano ſecanti baſim coni ad rectam.d.e.ad rectos exiſtentem.b.g.baſi trianguli.a.b.g.& faciat ſectionem in ſuperficie coni.d.z.e.lineam,Diameter autem ſectionis.z.h.productus coĩcidat vni laterum trianguli.a.b.g. ſcilicet.a.g.extra ſumitatem coni ad .t.& per.a. ducatur.a.c. equidiſtans diametro ſectionis, & ab.z.ducatur.z.l.ad rectos & faciat ut quod ab.c.a. ad id quod ſub.b.c.g.ſic.t.z.ad.z.l.& relictum ſit quodam punctum contigens in ſectione ſcilicet.m.& per.m.ducatur.m.n.equidiſtãs.d.e.& per.n.ducatur.n.x.equidiſtãs.z.l.& iuncta.t.l.producat̃ vſq ad.x. & per.l.&.x.ducantur.l.o.& .x.p.equidiſtãs z.n.Dico q.m.n.poteſt.z.x.quod adiacet ad.z.l.latitudo habẽs.z.n.excedens ſpecie l.x.exiſtenti plano ſub.t.z.l.ducatur.n.per.n.linea.r.n.s.equidiſtãs.b.g.eſt autem & n.m.equidiſtans.d.e.planũ igitur per.m.n.r.s.equidiſtans eſt plano per.b.g.d.e.ideſt, baſi coni.Si igit̃ producat̃ planũ p.m.n.r.s.ſectio circulus erit,cui⁹ diameter.r.n.s.& eſt ad ipſam cathetus.m.n.qđ igit̃ ſub.r.n.s.eq̃le eſt illo qđ ab.m.n.& qm̃ eſt ut qđ ab

a.c.ad id quod ſub.b.c.g.ſic.t.z.ad.z.l.ratio eius quod ab.a.c.ad id quod ſub.b.c.g. componitur ex ratione quam habet.a.c.ad.c.g.&.a.c.ad.c.b.Igitur & ratio.z.t.ad.z. l.componitur ex ratione,quam habet.a.c.ad.c.g.&.a.c.ad.c.b.ſed ut.a.c.ad.c.g.ſic.t. h.ad.h g.ideſt.t.n.ad.n.s.vt autem.a.c.ad.c.b.ſic.z.h.ad.h.b.ideſt.z.n.ad.n.r.Ratio igitur.t.z.ad.z.l.cōponitur ex ratione.t.n.ad.n.s.& rōne.z.n.ad.n.r.cōpoſita aūt ratio ex ratiōe.t.n.ad.n.s.&.z.n.ad.n.r. eius eſt quod ſub.t.n.z.eſt ad id quod ſub.s. n.r.& ut igitur id quod ſub.t.n.z.ad id quod ſub.s.n.r.ſic.t.z.ad.z.l.ideſt.t.n.ad.n.x. ſed ut.t.n.ad.n.x.lineæ.z.n.cōmunis altitudinis acceptæ, ſic quod ſub.t.n.z.ad quod ſub.z.n.x.& ut vtiq; quod ſub.t.n.z.ad id quod ſub.s.n.r.ſic & ad id quod ſub.x.n.z. quod vtiq; ſub.s.n.r.equale eſt illo quod ſub.x.n.z.quod autem fit ab.m.n.equale demonſtratum eſt eo quod ſub.s.n.r.Igitur quod ab.m.n.fit equale eſt eo quod ſub.x.n. z.quod autem eſt ſub.x.n.z.eſt parallelogramum.x.z.igitur.m.n.poteſt id quod.x.z. quod adiacet ad lineam.z.l.latitudinem habens.z.n.excedentem.l.x.ſimili exiſtenti illo quod ſub.t.z.l.vocetur autem talis ſectio hyperbole.d.z.autem ad quam poteſt ductę ad.z.h.ordinate voceturq; eadem & recta,tranſuerſa autem.z.t.



Propoſitio, Decimatertia.

SI Conus plano ſecetur per axim, ſecetur autem & altero plano coincidenti utriq; laterum trianguli per axim, nec ducto ad baſim coni, neq; ſubcontrarie, planum

autem in quo eſt baſis coni & ſecans planum coincidat ad rectã ad rectos exiſtentem, vel baſi trianguli per axim vel in rectam ipſi, quæ a ſectione coni equidiſtans ducta eſt Communi ſectioni planorum vſq̃ ad diametrũ ſectionis poterit: quod ſupficies adiacens ad quandã lineam ad quam habet rationem diameter ſectionis, quam quadratũ quod fit a ducta a ſumitate Coni preter diametrũ ſectionis vſq̃ ad baſim trianguli latitudinem habens receptã ſub ipſa a diametro ad ſumitatẽ ſectionis deficiens ſpecie ſimili & ſimiliter poſito, cõtẽto ſub diametro & illa ad quã poſſunt ductę ordinate. Vocetur autem talis ſectio defectio: Sit conus, cuius ſumitas punctũ.a. baſis autẽ.b.g. circulus & ſecetur plano per axim & faciat ſectionẽ triangulũ.a.b.g. ſecetur autem & altero plano coincidenti vtriq̃ laterũ triãguli ꝑ axim, nec equidiſtanti baſi coni, Nec ſubcontrarie ducto & faciat ſectionẽ in ſuperficie Coni.d.l.e. lineã, Communis autem ſectio ſecãtis plani & eius in quo eſt baſis Coni, ſit.z.h. ad rectos exiſtẽs.b.g. diameter autem ſectionis ſit.e.d.& ab.e. ducatur.e.t. ad rectos.e.d.& ꝑ.a. ducatur.a.c. equidiſtans e.d. & faciat vt quod ab.a.c. ad id quod ſub.b.c.g. ſic.d.e. ad.e.t. & relictũ ſit quodã punctũ in ſectione & ſit.l.& ꝑ.l. ducatur.l.m. equidiſtãs.z.h. Dico q̃.l.m. poteſt quod ſupficies. quæ adiacet ad.e.t. latitudinẽ habens.e.m. deficiẽs ſpecie ſimili eo quod ſub d.e.z. Cõiungatur.n.d.t.& per.m. ducatur.m.n.x. equidiſtãs.t.e.& ꝑ.t.&.x. ducantur t.n.&.x.o. equidiſtantes.e.m.& per.m. ducatur.p.m.r. equidiſtans.b.g. quoniã igitur p.r. equidiſtans.e.b.g. eſt autẽ &.l.m. equidiſtans.z.h. planũ igitur per.l.m.p.r. equidiſtans eſt plano per.z.h.b.g. ideſt baſi Coni ſi igitur ducatur planũ ꝑ.l.m.p.r. ſectio circulus erit, cuiꝰ diameter.p.r.& eſt cathetus ad ipſam.l.m. quod igiť ſub.p.m.r. equale eſt illo quod ab.l.m.& quoniã eſt vt quod ab.a.c. ad id quod ſub.b.c.g. ſic.e.d. ad e.t. ratio autẽ eiũs quod ab.a.c. ad id quod ſub.b.c.g. cõponitur ex ratione quam habet.a.c. ad.c.b.&.a.c. ad.c.g. Sed vt.a.c. ad.c.b. ſic.c.h. ad.h.b. ideſt.e.m. ad.m.p. vt autẽ.a.c. ad.b.g. ſic.d.h. ad.h.g. ideſt.d.m. ad.m.r. ratio igitur.d.e. ad.e.t. cõponitur ex ratione.e.m. ad.m.p.& ex ratione.d.m. ad.m.r. cõpoſita autem ratio ex ratione quã habet.e.m. ad.m.p.&.d.m. ad.m.r. eius eſt quod ſub.e.m.d. ad id quod ſub.p.m.r. eſt igiť vt quod ſub.e.m.d. ad id quod ſub.p.m.r ſic.d.e. ad.e.t. ideſt.d.m. ad.m.x vt autẽ.d.m. ad.m.x. Cõmunis.m.e. altitudinis acceptę, ſic quod ſub.d.m.e. ad id qđ ſub.x.m.e. vt igiť quod ſub.d.m.e. ad id quod ſub.p.m.r. ſic quod ſub.d.m.e. ad id quod ſub.x.m.e. equale igiť eſt quod ſub.p.m.r. eo quod ſub.x.m.e. quod autem ſub p.m.r. equale demonſtratum eſt eo quod ab.l.m. fiť. Igitur & quod ſub.x.m.e. equale eſt eo quod fit ab.l.m. Igitur.l.m. poteſt quod.m.o. quod adiacet. ad.t.e. latitudinem habens.e.m. deficiens ſpecie.o.n. ſimili exiſtẽti eo quod ſub.d.e.t. vocetur autem talis ſectio defectio.&.e.t. ad quam poſſunt ductæ. ad.d.e. ordinate. ipſa autem & recta, tranſuerſa autem.d.e.

℞ 36 m̃ 1 co p̃ ♀ p̃ 4 m̃ ♀ ȝ p̃ ℞ cuba 1684 p̃ ℞ 866 m̃ 8 p̃ ℞ 263

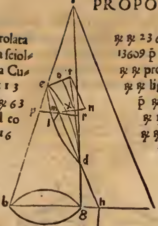
℞ 42 m̃ 1 co p̃ ȝ p̃ 6 m̃ ȝ ȝ p̃ ℞ cuba 8664 m̃ ℞ 3683 m̃ ℞ ℞ 663

℞ ℞ cuba 3633 m̃ ♀ p̃ ℞ prolata 7788 m̃ 6 p̃ ℞ quadra 1600 p 8

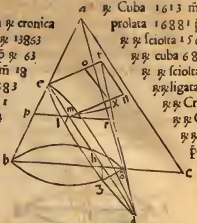
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℞ ℞ 6663 m̃ ℞ cuba 8616 p̃ ȝ m̃ 1 co p̃ 4 m̃ ℞ Cronica 3693

℞ ℞ prolata Cronica ſciolta ligata Cubica 1613 p̃ 4 m̃ ℞ 63 p̃ 𝔉 m̃ l co ℞ 13916



℞ ℞ 23683 p̃ 𝔉 m̃ ℞ cronica 13609 p̃ 𝔉 m̃ 40 p̃ ℞ 13863 ℞ ℞ prolata 6936 p̃ ℞ 63 ℞ ℞ ligata 10916 m̃ 18 p̃ ℞ ſciolta 8683 ℞ ℞ 436841 ℞ ℞ 1646 m̃ 4 ℞ Sciolta 1816



℞ Cuba 1613 m̃ ℞ prolata 1688 p̃ 4 ℞ ℞ ſciolta 15616 ℞ ℞ cuba 6849 ℞ ℞ ſciolta 13600 ℞ ℞ ligata 4866 ℞ ℞ Cronica 316 ℞ ℞ Cuba 261 ℞ ℞ ligata 91 p̃ 𝔉 m̃ ꝓp

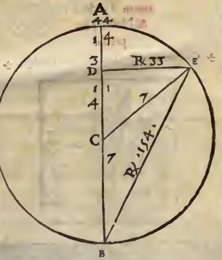
SI ſuperficies ad ſumitatẽ plano ſecentur non per ſumitatẽ, erit in vtraq; ſuperficierũ ſectio vocata hyperbole & duarũ ſectionum diameter eadẽ erit, & ad quas poterunt ductę ad diametrũ, equidiſtantes ei, quæ in baſi coni lineę equales & ſpẽi tranſuerſum latus cõmune inter ſumitates ſectionũ, vocenturq; tales ſectiones contrapoſitę: Sint ad ſumitatẽ ſuperficies, quarũ ſumitas punctũ.a. & ſecentur plano non per ſumitatẽ & faciant in ſuꝑficie ſectiones.d.e.z.&.h.t.c. Dico q; vtraq; ſectionũ.d.e.z.&.h.t.c.eſt ea quæ vocať hyperbole, Sit.u.circulus per quẽ fertur linea deſcribens ſuperficiẽ & ſit.b.d.g.z.& ducať in ſuperficie per.z.h.o.c.planũ ipſi equidiſtãte Cõmunes aũt ſectiones ſectionũ.h.t.c.&.z.e.d.&circulorum ſcꝫ.z.d.&.h.c.erunt equidiſtantes, axis aũt ſit conicæ ſuꝑficiei linea.l.a.y.centra aũt circulorũ ſint.l.&.y.& ab.l.ad.z.d.cathetus ducta producať ad puncta.b.g.& per.b.g.& axim planũ producatur, faciet ſectiones in circulis lineas.x.o.&.b.g.eqdiſtantes in ſuperficie aũt lineas.b.a.o.&.g.a.x.eritq; &.x.o.ad rectos.h.c.qm̃ &.b.g.eſt ad rectos.z.d.& eſt vtraq; equidiſtans, & qm̃ planum per axim ſectionibus coīcidit ad pũcta.m.&.n.intra lineas, manifeſtũ q; & lineas ſecat planũ, ſecet in punctis.t.&.e.puncta igiť.m.e.t.n.ſunt in plano ꝑ axim, & in plano in quo ſunt lineæ, recta igiť eſt linea.m.e.t.n.& manifeſtum q;.&.x.t.a.g.ſunt in linea ſimilr q;.&.b.e.a.o.ſunt,u.in ſuꝑficie conica & ĩ plano ꝑ axim: ducanťa pũctis.t.& e.lineæ.t.r.&.e.p.ad rectos.t.e.&.p.a.ducať.s.a.t.eqdiſtans.m.e.& faciat vt qď ab a.s.ad id qď ſub.b.s.g.ſic.t.e.ad.e.p.utq; qď ab.a.t.ad id qď ſub.o.t.x.ſic.e.t.ad.t.r.qm̃ igitur conus, cuius ſumitas punctũ.a.baſis aũt circulus.b.g.ſecatus eſt plano ꝑ axim & fecit ſectionẽ triãgulũ.a.b.g.ſecatuſq; eſt & altero planũ ſecanti baſim coni ꝑ rectã.d.m.z.ad rectos exiſtẽtẽ.b.g.& fecit ſectionẽ in ſuꝑficie.d.e.z.Diameterq;.m.e.ꝓducta coīcidit vni laterũ triãguli ꝑ axim extra ſumitatẽ coni, & ꝑ punctũ.a.ducta eſt a.s.eqdiſtans diametro ſectiõis.e.m.& ab.e.ducta eſt.e.p.ad rectos.e.m.& eſt ut qď ab.a.s.ad id qď ſub.b.s.g.ſic.e.t.ad.e.p.Igiť ſectio.d.e.z.hyperbole eſt, &.e.p.ad quã pñt ductę ad.e.m.ordinate, tranſuerſum aũt ſpeciei latus eſt.t.e.ſimilr q; &.h.t.c.hyperbole eſt: cuius diameter.t.n.&.t.r.ad quã poſſunt ductæ ordinatę ad.n.tranſuerſum aũt ſpeciei latus.t.e.eſt dico q;.t.r.equalis eſt.e.p.qm̃ equidiſtans.b.g.eſt.x.o.eſt ut.a.s.ad s.g.ſic.a.t.ad.t.x.& ut.a.s.ad.s.b.ſic.a.t.ad.t.o.ſed ratio.a.s.ad.s.g.cũ ratione.a.s.ad.s.

REVERENDISSIMO D. D. MARINO GRIMANO T. S. MAR-

cElli . S . R . E . P . Cardinali Patriarchæ Aquileienſi, Peruſiæ, Vmbriæq; de

Latere Legatus. Ioannes Maria Memus . P . Venetus . S . D.

LABORES, Opera, lucubrationes, ſub nomine alicuius, cui maxime deberent, qui & ipſa ætate virtute, doctrina, authoritate præ cæteris floruiſſet, in lucem, perinde ac proprios fœtus, antiqui authores edebant, Præſul optime, Reuerendiſſime, quòd amoris, beneficiiq; accepti vices, quo poſſent officio, rependerent, grates'q; referrent; quòd & eorum dogmata edita ſub hominum grauiorum authoritate, & eorum illuſtrium, plus, neſcio quo pacto, ſecum ferre æſtimationis viderentur. Itaq; cum poſt obitum Ionnis Baptiſtæ Memi patrui mei, viri & ſi in omni ſcientiarum genere eruditiſſimi, Mathematicarum tamen huius ætatis facile principis, vti non ego tantum, qui nepos, non vniuerſa modo Italia, verum exteræ quoq; gentes, & remotiſſimæ, communi omnium fama, conſentiunt, Bibliothecam ipſius diſcurrerem, Apollonius Pergeus, Mathematicus inter græcos author grauiſſimus, ab ipſo patruo meo extrema ſua hac ingraueſcente ætate, quaſi alter Cato, literas græcas didicerat, latinitate donatus, in manus noſtras inciderit: decreui, ne tam ſingularis fœtus, tamdiu abditus, tam ſtudioſis neceſſarius, licet immaturus adhuc, & præcox, aborteretur, atq; ſuffocaret, eu ipſum, ex ipſo quaſi matris vtero cæſo, perinde ac Cæſarem alias, & Manlium, & Africanum, excerpere, tibi dicare, ſub feliciſſimoq; nomine tuo publice cudendum tradere: cum nullus ſit, cui ob innumera, ingentiaq; erga me beneficia, humanitatem, clementiam, magis'q; tibi debeam: qui hoc æuo, hac inclyta vrbe maiori virtute, maiori authoritate floreat, q̃ tu ſacerrime Antiſtes: quem vnum noſtræ ipſius Ciuitatis, quinimmo noſtrorum temporum doctrina, integritate, induſtria, ſplendore, liberalitate, gratia, omnium iudicio, præſtantiſſimum dixerim. Suſcipe igitur ſolita clementia, tibi à me tanti authoris emanatum munus, vt meam in te præcipuam beneuolentiam, conteſtetur; deuotionem, obſeruantiam, quaſq; poſſum tibi gratias nomine meo referat; vt Pergeus ipſius patrui mei ſtudio vitæ reſtitutus, tuo fauore in lucem editus tuis ſtudiis cæterum inſeruiat, tecum feliciter vitam agat, ſcientiarum demum cultores omnes tibi perpetuo debeant. Vale.



APOLLONII PERGEI

PHILOSOPHI. MATHEMATICIQVE EXCEL lentiſsimi Opera. Per doctiſsimum Philoſophum Ioannem Baptiſtam Memium, Patricium Venetum. Mathematicarumq; Artium in Vrbe Veneta Lectorem publicum. De Grȩcho in Latinum Traducta.

¶Apollonii Pergæi Conicorum Primum.

APOLLONIVS EVDEMO SALVTEM. SI corpore bene vales, & alia ſm mentem tibi ſunt, bene ſe habet: mediocriter valemus & nos, Tempore quo eramus tecum in Pergamo, vidi te cupientem participare ex conicis a nobis compoſitis, Miſi igitur tibi primum librum, cum eum recte correxerim reliqua uero quando expleuerimus, mittemus: Non enim te oblitum puto eorum, quæ a me audiuiſti: quare ingreſſum quendam ad hæc fecimus rogatus a Naucrate Geometra ex illo tempore quo vacauit apud nos profectus Alexandream. & ideo componentes ipſa in octo libros ex ipſa partiti ſumus ea in diligentius quid, propter idem eſſe quo ad perfectionem non diligenter percutentes, ſed omnia incidentia nobis ponentes tanquam ad vltimum peruenire cupientes vnde tempus nunc accipientes. contingentem correctionem damus: & quoniam contingit & alia quȩdam dictorum a nobis mutare & primum & ſecundum librum corrigere ne admireris ſi incidas his aliter fortaſſe ſe habentibus, ab octo autem libris primi quattuor ceciderunt in Elementarem educationem: Continet aut primus quidem generationes trium dimenſionum & oppoſitorum, & in ipſis principalia accidentia vtplurimum generaliter magis deſcripta, præter, ea quæ ab aliis compoſita ſunt. Secundus. Accidentia circa Diametros & axes ſectionum & concidentes, & alia generalem & neceſſariam vtilitatem præbentia ad diuiſiones, quaſdam autem Diametros, & quaſdam axes voco peritiam ex hoc libro. Tertius multa & mirabilia Theotemata vtilia & ad compoſitiones ſolidorum locorum, & diuiſiones, quarum plurima & pulcherrima noua ſunt: quæ conſiderantes cognouimus non eſſe poſitum ab Euclide locum ſuper tres aut quartuor lineas, ſed particulam contingentem ipſius, & hanc non fœliciter, Non enim erat poſsibile ſine inuentis a nobis perficere poſitionem. Quartus autem quotupliciter conorum ſectiones, inuicemq; & circuli circũferentia confligant, & alia ex ſuperfluo quorum nullus ex prioribus ſcripſit, Coni ſectio vel circuli circũferentia quot puncta ſuſcipiant, reliqua vero ſunt de Elementarii ſubſtantia. Eſt enim illud quidem de minimis & maximis vtplurimum,

Aliud de equalibus & ſimilibus Coni ſectionibus. Aliud de diuiſis propoſitinibus/ De problematibus conicis. Sed & omnibus manifeſtis exit volentibus inquirere ipſa: ut ipſorum ſingulus demonſtrat. Vale.

DIFFINITIONES PRIMÆ.

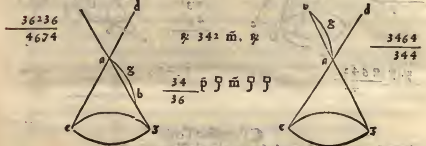
SI A QVODAM puncto ad circũferentiam circuli, qui non eſt in eodem plano in quo punctum eſt, linea coniuncta in alteram partem protrahantur, et manente puncto linea ducta circa circuli circumferentiam in idem rurſus reſtituatur, vnde dictum eſt duci. Scriptam ſuperficiem ſub linea quæ componitur ex duabus ſuperficiebus ſ̄m ſumitatem inuicem poſitis / quarum vtraqꝫ infinitum augetur, ſcripta linea in infinitum protracta, voco ſuperficiem conicã. Sumitatem vero ipſius punctum dictum. Axim autem lineam ductam per punctum & Centrum circuli. Conum autem contentam figuram a Circulo & Conica ſuperficie inter ſumitatem & circuli circumferentiam. Sumitatem autem Coni punctum quod ſuperficiei eſt ſumitas. Axim autem lineam ductam a ſumitate ad centrum circuli. Baſim autem circulum. Conorum autem rectos voco ad rectos habentes baſibus axes. Scalenos autem non ad rectos habentes baſibus axes.

OMnis curuæ lineæ, quæ eſt in vno plano, Diametrum uoco lineam quæ ducta a curua linea omnes ductas in linea rectas lineas rectę cuidam equidiſtantes in duas partes diuidit. Sumitatem autem lineę terminus lineę rectę ad lineam deſcendens autem ſuper Diametrum diuiditur ſingula equidiſtantium. Similiter autem & duarum curuarum linearum in vno plano iacentium Diametrum voco. obliqua quę ſecans omnes lineas ductas in vtraſqꝫ lineas pręter quandam dupliciter lineam diuidit. Sumitates autem linearum terminos Diametri apud lineas. Rectam autem, quę poſita inter duas lineas omnes ductas equidiſtantes lineas lineæ cuidam, & receptas inter duas lineas dupliciter diuidit ducta autem ſuper Diametrum diuiditur ſingula equidiſtantium. Coniunctos voco Diametros duarum curuarum linearum lineas, quarum vtraqꝫ Diameter exiſtens, equidiſtantes alii lineas dupliciter diuidat. Axim vero voco curuę lineę & duarum curuarum linearum, lineam, quę diameter exiſtens lineę vel linearum ad rectos ſecat equidiſtantes. Coniunctos autem axes curuę lineę vel duarum curuarum linearum, lineas quæ diametri coniunctæ exiſtentes, ad rectos diuidunt ad inuicem equidiſtantes.

Propoſitio, Prima.

QVÆ a ſumitate conicæ ſuperficiei ducuntur lineæ, ad puncta quæ in ſuperficie ſunt, ſunt in ſuperficie.

Sit Conica ſuperficies, cuius ſumitas ſit. A. Punctum, & ſit in ſuperficie conica punctum. B. & ducatur linea. A. B. G. Dico q. A. G. B. linea eſt in ſuperficie, Si enim poſſibile non ſit, & ſit deſcribens ſuperficiem linea. d. e. Circulus autem per quem linea. D. e. ducitur ſit. e. z. Si manente puncto. a. linea. d. e. ducatur circa circuli. e. z. circūferentiam, deinde, & per pūctum. B. & erit duarum linearum iſdem termini: quod eſt abſurdum, non igitur ducta linea a puncto. a. ad. b. eſt extra ſuperficiem, eſt vtiq; in ſuperficie, & clarum eſt, q. ſi a ſumitate ad punctum: quod ſit intra ſuperficiem ducatur linea cadet infra Conicam ſuperficiem, ſi vero ad punctum quod ſit extra ſuperficiem, erit etiam vtiq; linea extra ſuperficiem.

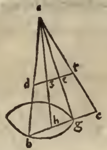


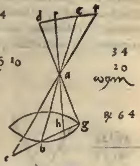
Propoſitio, Secunda.

SI in vtram igitur ſuperficiem ſm ſumitatem duo puncta ponantur, linea autem ſuper puncta iuncta non coincidat ſuper ſumitatem cadit intra ſuperficiem, ſi vero vltra lineam, extra:

Sit conica ſuperficies, cuius ſumitas punctum. a. circulus autem per quem fertur linea deſcribens ſuperficiens ſit. b. g. & ponantur in vtram ſuperficiem ſm ſumitatem duo puncta. d. e. & ducta. d. e. nō cadat ſuper. a. punctum, dico q. d. e. eſt intra ſuperficiē, & quæ eſt vltra lineam, extra. Ducantur lineæ. a. e. &. a. d. & protrahantur, cadent quidem ſuper circuli ſuperficiem, cadant igitur ad. b. g. & ducatur. b. g. Erit vtiq; ſuper B. G. lineam. Triangulus enim. B. G. A. eſt in vno plano, Cadat igitur ad. H. quoniam igitur. h. eſt intra ſuperficiem conicam &. a. h. vtiq; intra ſuperficiem conicam erit, quare &. z. intra ſuperficiem conicam eſt. Similiter etiam demonſtrabitur q. omnia puncta infra. D. E. intra ſuperficiem conicam. D. E. igitur eſt ipſius ſuperficiei, producatur autem ad. t. dico q. extra ſuperficiem conicam cadet.

Si enim poſsibile ſit.t.eſſe intra ſuperficiem conicam/ducatur.a.t. & protrahatur/ cadet vtiq; aut ſuper circuli circũferentiam aut intra/quod eſt impoſſibile:cadit enim ſuper.b.g.productam vſq; ad.c.linea igitur.e.t.extra ſuperficiem eſt linea igitur.d.e.eſt intra ſuperficiem conicam/& quæ vltra eſt,extra.

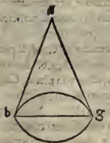




Propoſitio Tertia.

SI conus plano ſecetur,in ſumitate Sectio Triangulus eſt.

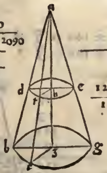
Sit conus/cuius ſumitas punctum.a.baſis autem.b.g.circulus/ & ſecetur a quodam plano per punctum.a.& faciat ſectiones in ſuperficie lineas.a.b.&.a.g.& in baſi faciat lineam.b.g.dico q;.a.b.g.Triangulus eſt.quoniam enim a puncto.a.ad.b.Iuncta cõmunis ſectio eſt diuidentis planum & ſuperficiei Conicæ/recta eſt linea.a.b.ſimiliter autem &.a.g.eſt etiam &.b.g.recta. Triangulus igitur.a.b.g. Si igitur conus plano ſecetur in ſumitate/ſectio Triangulus eſt.

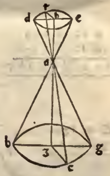


¶Propoſitio,Quarta.

SI igitur vtra ſuperficies in ſumitate plano quodam ſecetur equidiſtanti circulo.per quem fertur linea deſcribens ſuperficiem/deſcriptus planus inter ſuperficiem circulus erit centrum habens in axi:contenta autem figura a circulo & a conica ſuperficie recepta a plano ſecante ad ſumitatem/conus erit.

¶Sit ſuperficies conica,cuius ſumitas punctum.a.circulus autem per quem fertur linea deſcribens ſuperficiem ſit.b.g.& ſecetur plano quodam/equidiſtanti circulo.b.g.& faciat in ſuperficie ſectionem lineam.d.e.dico ꝙ linea.d.e.circulus eſt in axi habens centrum.Sit enim centrum circuli.b.g.punctum.z.& ducatur.a.z.axis vtiq; eſt & tangatur a ſecanti plano/tangatur igitur in puncto.h.& proferatur quodam planum per a.z.eſt vtiq; ſectio triangulus.a.b.g.& quoniam puncta.d.h.e.ſunt in plano ſecanti/eſt autem & in plano.a.b.g.recta igitur eſt,d.h.e.ſit inſuper quodam punctum.t.in linea d.e.& iuncta.a.t.proferatur/occurret vtiq; circũferentię.b.g.occurrat igitur in puncto c.& ducantur.h.t.&.z.c.& quoniam duo plana equidiſtantia.ſ.d.e.&.b.g.a quodam plano.a.b.g.ſecantur cõmunes ipſorum ſectiones equidiſtãtes ſunt/equidiſtans igitur eſt.d.e.lineæ.b.g.propter eadem vtiq; &.h.t.equidiſtans.c.z.eſt igitur / vt.z.a.ad.a.h.ſic.z.b.ad.d.h.&.z.g.ad.h.e.&.z.c.ad.h.t.& ſunt tres.ſ.b.z.&.c.z.&.z.g.inuicem equales/& tres vtiq;.d.h.&.h.t.&.h.e.inuicem equales ſunt.ſimiliter etiam demõſtrabimus ꝙ & omnes lineæ ductæ a puncto.h ad lineam.d.e.inuicem ſunt equales,circulus vtiq; eſt linea.d.e.centrum habens in axi/& manifeſtum eſt.ꝙ contenta figura a circulo.d.e.& conica ſuperficie intercepta ab ipſo ad punctum.a.conus eſt.& demonſtrabitur.ꝙ communis ſectio plani ſecantis & trianguli per axim/Diameter eſt circuli.





PROPOSITIO V.

ℂPropoſitio,Quinta.

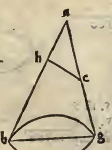
SI conus ſcalenus plano ſecetur per aximad rectos baſi, ſecetur autem & altero plano ad rectos triangulo per axim,auferenti autem ad ſumitatẽ triangulum,ſimile quidem per axim triangulo,ſubcontrarieq́ʒ poſitum,ſectio circulus eſt,vocetur autem talis ſectio ſubcontraria.

ℂSit Conus ſcalenus:cuius ſumitas punctum.a.baſis autem.b.g.circulus,& ſecetur plano per axim,recto ad.b.g.circulum,& faciat ſectionẽ.a.b.g.triangulum:Secetur etiam & alio plano ad rectos exiſtenti.a.b.g.triangulo auferenti autem triangulum ad punctum.a.Triangulus.a.h.c.ſimile quidem triangulo.a.b.g.Subcontrarie autẽ poſitum, ideſt, quare equalem eſſe angulum ſub.a.c.h.angulo ſub.a.b.g. & faciat ſectionem in ſuperficie lineam.h.t.c.Dico q̊ circulus eſt linea.h.t.c.ſint enim quædam puncta in lineis.h.t.c.&.b.g.& ſint.t.l.& a punctis.t.l.ad planum per.a.b.g.triangulum catheti ducantur.cadent vtiq́ʒ ad communes ſectiones planorũ,cadant igitur vt.z.t.l.m.equidiſtans nempe eſt.z.t.lineæ.l.m.ducatur per.z.d.z.e.equidiſtans.b.g.eſt autem &.z.t.equidiſtans.l.m.planum igitur per.z.t.equidiſtat baſi coni, circulus igitur eſt non diameter linea.d.e.equale igitur quod ſub.d.z.&.z.e.illo quod fit ab.z.t.& quoniam equidiſtans eſt.d.e.lineæ.b.g.angulus.a.d.e.equalis eſt angulo ſub.a.b.g.& angulus ſub.a.c.h.angulo ſub.a.b.g. & angulus ſub.a.c.h.angulo ſub.a.d.e. eſt equalis, ſunt autem & ad punctum.z.anguli equales,ſecundum enim ſumitatem ſimile eſt triangulus.d.z.h.triangulo.c.z.e.eſt vtiq́ʒ vt.e.z.ad.z.c.ſic.z.c.ad.z.d. quod igitur ſub.e.z.&.z.d.illo quod ſub.c.z.&.z.e.equale eſt,ſed quod ſub.e.z.&.z.d. demonſtratum eſt equale illo,quod ab.z.t.fit,& quod ſub.c.z.&.z.h.equale eſt illo,quod ab.z.t.fit. Similiter demonſtrabitur q̊ catheti omnes ab.h.t.c.linea ductæ ad.h.c.equum poſſe illo quod fit a ſectionibus.h.c.lineæ,Circulus igitur eſt ſectio non diameter.c.h.

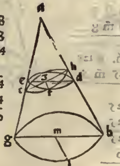
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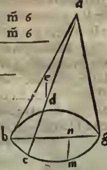
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ℂPropoſitio, Sexta.

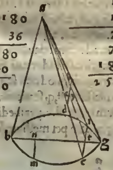
SI conus plano ſecetur per axim/relictumq; ſit quodam punctum in Coni ſuperficie, quod non ſit in latere trianguli per axim, & ab ipſo ducatur equidiſtãs quidam recte, quę eſt cathetus a circumferentia circuli ad baſim trianguli, coincidat triangulo per axim, & ducta vſq; ad alteram partem ſuperficiei per medium ſecabitur a Triangulo. Sit Conus/cuius ſumitas ſi punctum.a.baſis autem circulus.b.g.& ſecetur conus plano per axim/& faciat ſectionem.a.b.g.circulum/& a quodam puncto eorum quę ſunt in ſuperficie.b.g.ſcilicet.m.ducatur cathetus.m.n.ad.b.g.relictumq; ſit in ſuperficie Coni punctum.d.& a puncto.d.ducatur.d.e.equidiſtans.m.n.Dico q.d.e.producta coincidet plano Trianguli.a.b.g.& producta ad alteram partem coni vſq; quo ſuperficiem eius tangat/per medium ſecabitur a plano Trianguli.a.b.g.coniungatur.a.g.& producatur, cadet ſuper ſuperficiem.b.g.circuli, cadat igitur ad.c.& a puncto.c.ad.b.g.cathetus ducatur.c.l.t.equidiſtans igitur eſt.c.t.lineę.m.n.&.d.e.igitur ducatur ab.a.ad.t.linea.a.t.quoniam igitur in triangulo.a.t.c.equidiſtans.d.e.eſt.t.c.producta ergo.d.e.tanget.a.t.Sed.a.t.eſt in plano.a.b.g.tanget igitur.d.e.planum trianguli.a.b.g.tangat igitur in.z.& ducatur.d.z.in rectũ vſq; quo tangat Coni ſuperficiem ad.h.dico q equalis.d.z.eſt.z.h.quoniam.A.h.l.puncta ſunt in ſupficie coni, & in plano producto per.a.t.a.c.d.h.c.l.qđ per ſumitatem coni triangulus eſt.puncta igitur.a.h.l.in cõmuni ſunt ſectione ſuperficiei coni & Trianguli, recta igitur eſt.a.h.l.quoniã ergo in triangulo.a.l.c.ducta eſt.d.h.eqdiſtans baſi.c.t.l.& ducta eſt ab.a.linea.a.z.t.eſt vt.c.t.ad.t.l.ſic.d.z.ad.z.h.equalis autẽ eſt.c.t.lineę.t.l.quoniam in circulo.b.g.cathetus eſt ſuper diametrum linea.c.l.equalis igitur &.d.z.lineę.z.h.

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℞ 180 m̃ 6
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36
216



18 m̃ ℞ 180
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216 m̃ ℞ 25920

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1080
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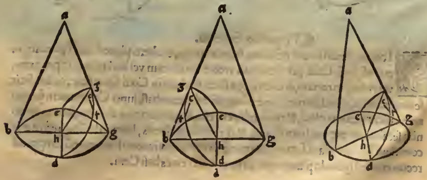


180
144
720
720
180
25920

ℂPropoſitio, Septima.

SI conus plano ſecetur per axim, ſecetur autem, & altero plano ſecanti planum, in quo eſt baſis Coni per rectam ad rectos exiſtentem vel baſi trianguli per axim, vel eidem in rectam, ductæ rectę a facta ſectione in Coni ſuperficie, quam fecit ſecans planum, equidiſtantes lineæ trianguli ad rectos baſi, ſuper Communem ſectionem cadent ſecantis plani, & trianguli per axim, & productę ad alteram partem ſectionis, ſecabuntur per medium ab ipſa. & ſi rectus eſt Conus, linea in baſi ad rectos erit communi ſectioni plani ſecantis, & trianguli per axim. ſi autem ſcalenus nõ ſemper ad rectos erit ſed quando planum per axim erit ad rectos baſi Coni.

¶ Sit conus, ſu[m]mitas punctum.a.baſis autem.b.g.circulus & ſecetur plano per axim,& faciat ſectionem.a.b.g.triangulum,ſecetur autem & altero plano ſecanti planum in quo eſt.b.g.circulus per lineam rectam.d.e.vel ad rectos exiſtentē.b.g.vel eidem in rectam & faciat ſectionem in ſuperficie Coni.d.z.e.communis autem ſectio ſecantis plani,& trianguli.a.b.g.linea.z.h.& relictum ſit quodam punctum in ſectione.d.z.e.& ſit.t.& ducatur.t.c.equidiſtans.d.e.Dico ꝙ.t.c.coincidet.z.h.& producta ad alteram partem ſectionis.d.z.e per medium ſecabitur a linea recta.z.h.quoniam Conus:cuius ſumitas quidem punctum.a.baſis autem.b.g.circulus,ſecatur plano per axim,& facit ſectionē a.b.g.triangulum,relictum eſt autem quodam punctum.t.in ſuperficie quod nõ eſt in latere trianguli.a.b.g.& eſt cathetus.d.h.ſuper.b.g.igitur per punctum.t.equidiſtans d.h.ducta ideſt.t.c.coincidit triangulo.a.b.g. & producta vſq; ad alteram partem ſuperficici per medium ſecabitur a triangulo, quoniam igitur ducta per.t.equidiſtans. d.e.coincidit triangulo.a.b.g.ſuper communem vtiq; cadet ſectionem ſecãtis plani & trianguli.a.b.g.Communis autem ſectio ſuperficierum eſt.z.h.ducta igitur per.t.equidiſtans,d.e.cadet ſuper.z.h.& producta vſq; ad alteram partē ſectionis.d.z.c.per medium ſecabitur,a,linea.z.h.vel conus rectus ſit,vel.a.b.g.triangulus per axim rectus ſit ad.b.g.circulum,vel neutrum.Sit prius conus rectus,ſit igitur & triangulus.a.b.g.rectus ad.b.g.circulum,cum igitur planum.a.b.g.ad planum.b.g.rectum ſit, Et communi horum ſectioni.b.g.in vno planorum ſcꝫ.b.g.ad rectos ducta eſt.d.e.Igitur.d.e.eſt ad rectos triangulo.a.b.g.& ad omnes vtiq; ductas ipſius lineas & exiſtentes in triangulo a.b.g.recta eſt,igitur & ad.z.h.eſt ad rectos.Non ſit autem Conus rectus ſi igitur triangulus per axim rectus eſt ad circulum.b.g.ſimiliter demonſtrabimus ꝙ &.d.e.eſt ad rectos.z.h.non ſit igitur triangulus per axim.a.b.g.rectus ad circulum.b.g.dico ꝙ nec.d.e.eſt ad rectos.z.h.ſi enim poſsibile ſit,eſt autem &.b.g.ad rectos,igitur.d.e.vtriq;.b.g.&.z.h.eſt ad rectos,& plano per.b.g.&.z.h.ad rectos erit planum autem per.b.g.z.h.eſt.a.b.g.igitur &.d.e.eſt ad rectos.a.b.g.triãgulo & omnia per eandem plana ſunt ad rectos triangulo.a.b.g.vnum autem planorum per.d.e.eſt.b.g.circulus b.g.igitur circulus ad rectos eſt triangulo.a.b.g.quare & triangulus.a.b.g.rectus eſt ad.b.g.circulum:quod non ſupponitur.Non igitur.d.e.eſt ad rectos.z.h.Ex hoc autem manifeſtum eſt,ꝙ ſectionis.d.z.e.Diameter eſt.z.h.quoniam ductas equidiſtantes cuidam rectæ.d.e.per medium diuidit.& ꝙ poſſibile eſt a Diametro.z.h.equidiſtantes quaſdam per medium ſecari,& non ad rectos.



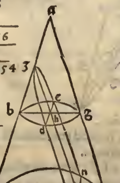
Propoſitio, Octaua.

SI conus plano ſecetur per axim, ſecetur autem & altero plano ſecāti baſim coni p rectā ad rectos exiſtentē baſi triāguli p axim: Diameter āt factę ſectiōis in ſupficie, vel ad vnū erit laterū triāguli, vel coincidet ipſi extra ſumitatē coni, pducat autem & coni ſuperficies & ſecans planum in infinitum, & ſectio in infinitum augebitur, & a diametro ſectionis ad ſumitatem omni datæ lineæ equalem recipiet quædam linea ducta a ſectione coni ad lineam in baſi coni.

Sit conus, cuius ſumitas punctū.a. baſis āt circulus.b.g.& ſecet plano p axim, & faciat ſectionē.a.b.g. triāgulū, ſecet aūt & altero plano, ſecāti circulū.b.g. p rectā.d.e. ad rectos exiſtētem.b.g.& faciat ſectionē in ſupficie.d.z.e. linea, diameter āt ſectiōis.d.z.e.ſit.z.h. quę eqdiſtās ſit.a.g. vel pducta ipſi coicidet extra punctū.a. Dico q & ſi coni ſupficies, & ſecās planū producat in infinitū.&.d.z.e.ſectio in infinitū augebit. producat.n. coni ſupficies, & ſecās planū. clarū vtiq q &.a.b.a.g.z.h. pducētur, qm̄.z.h. vel eſt eqdiſtās.a.g. vel producta coincidet ipſi extra punctū.a. lineę igit.z.h.&.a.g. pductę vſq ad.g.h. ptes nunq̄ coincidēt. producātur igit & relictū ſit quodā punctū.m.z.h. cōtingēs.t.& p punctū.t. ducat eqdiſtās.b.g. linea.c.t.l. ſed.d.e. eqdiſtās eſt.t.m.n. planū igit p.c.l.m.n. eqdiſtās eſt plano p.b.g.d.e. Circulus igitur eſt planū.c.l.m.n.& qm̄ pūcta.d.e.m.n. ſūt in plano ſecāti, eſt aūt & in ſupficie coni, Igit eſt in cōmuni ſectione. augebit vtiq.d.z.e. vſq ad pūcta.m.n. aucta ergo ſupficie coni & plani ſecantis vſq ad circulū.c.l.m.n. augebit & ſectio.d.z.e. vſq ad pūcta.m.n. Similiter etiā demōſtrabimus q & ſi in infinitū pducat & ſupficies coni, & planum ſecans, &.m.d.z. in ſectione in infinitū augebit & manifeſtū q omni datę lineę equalē recipiet quis a recta.z.t. ad punctum.t. ſi.n. ponamus.x.z. equalem datę: & per.x. ducamus equidiſtantem d.e. coincidet ſectioni, quēadmodum & per.t. demonſtratum eſt coincidens ſectioni per puncta.m.n. quare ducitur linea coincidens ſectioni equidiſtans exiſtens.d.e. recipiens ab.z.h. rectam equalem datæ ad punctum.z.

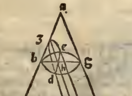
21 m̃ ℞ 196
14
294 m̃ ℞ 196
℞ 196 m̃ 7
245 p̃ ℞ 2454

14 m̃ 6
14 m̃ 6
℞ 232 p̃ 36



℞ 14 m̃ 1 co
℞ 14 m̃ 1 co
℞ 196 p̃ ʒ m̃ 28 co
14 co ℞ 196 p̃ ʒ m̃ 28 co
42 co ℞ 196 p̃ ʒ
21 m̃ ℞ 196
℞ 196 m̃ 7

12 p̃ ℞ 8
12 p̃ ℞ 8
℞ 80 m̃ ℞ 192

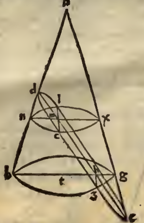


¶Propoſitio, Nona.

SI conus plano ſecetur coincidenti alterum latus trianguli per axim, neq; ad baſim ducto, neq; ſubcontrarie ſectio non erit circulus.

¶Sit conus cuius ſumitas punctũ.a.baſis aũt circulus.b,g.& ſecetur plano quodam nõ exiſtẽti eqdiſtãti baſi, neq; ſubcõtrarie, & facit ſectionẽ in ſupficie lineã.d,c.e. Dico q̃.d.c.e.linea non erit circulus, Si.n.poſſibile ſit, & coincidat ſecãs planũ baſi, & ſit cõmunis ſectio planorũ.z,h.centrũ aũt.b.g.circuli ſit.t.& ab ipſo cathetus ducatur t.h.ſuper.z,h.& producatᷣ per.h.t.& axim planũ, & faciat ſectiones in conica ſupficie lineas.s.b.a,/a,g.qm̃ igitur puncta.d,c.h. ſuper cõmunẽ ſectionẽ planorũ ſunt, recta eſt ergo.d,c.e.relictum ſit quodã ſuper lineã.d.c.e.punctũ.c.& ducatᷣ per.c./c.l.eqdiſtãs,z.h.eritq;.c.m,equalis.l.m.diameter igitur,d.e,eſt circuli.d.m.l.c.ducatᷣ vtiq; per m.linea.n.m.x.equidiſtãs b.g.eſt aũt.c.l.equidiſtãs.z,h,quare planũ per.n.x.c.m.equidiſtãs eſt plano per.b.z.h.ideſt baſi, & erit ſectio circulus, ſit.n.c.x, & qm̃.z.h.eſt ad rectos.b,h, &.c.m.eſt ad rectos.n,x.quare quod eſt ſub.n.m.x.equũ eſt illo quod fit ab c.m.circulus.n.ſubiicitur, d.c.e, l.linea, & diameter ipſius.d.e.quod eſt igitᷣ ſub.n.m.x.equũ eſt illo quod eſt ſub.d.m.e.eſt vtiq; vt.m.n,ad.m.d.ſic.e.m.ad.m.x.ſimile igitur eſt.d m,n.triãgulus triãgulo.x.m.e.& ãgulus ſub,d.m,n,equalis eſt ãgulo qui ſub.m,e.x.Sed & ãgulus ſub.d.n,m,equalis eſt angulo ſub.a,b,g.equidiſtans.n.eſt,n.x.lineæ b.g.igitur & angulus ſub.a.b.g.equalis eſt angulo ſub.e.m,x.ſubcontraria igitur eſt ſectio quod non ſubiicitur, non igitur circulus eſt linea,d.c.e.

16 m̃ 1 co
16 m̃ 1 co
℞ 196 p̃ ʒ m̃ 32 co
16 co / ℞ 256 p̃ ʒ m̃ 32 co
48 co / ℞ 256 p̃ ʒ
24 m̃ ℞ 256
℞ 256 m̃ 8



℞ 24 m̃ ℞ 256
16 /
℞ 384 m̃ ℞ 4096
℞ 256 m̃ 8
℞ 256 m̃ 8
℞ 320 m̃ ℞ 1684

¶Propoſitio, Decima.

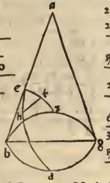
SI in coni ſectione relicta ſint duo puncta, recta ad puncta iuncta intra ſectionem cadet, quæ autem in rectam ipſius extra.

¶Sit conus, cuius ſuperficies punctum.a.baſis autem circulus.b.g.& ſecetur plano per axim & faciat ſectionem.a.b.g triangulum, ſecetur autem & altero plano, & faciat ſectionem in coni ſuperficie, lineam.d.e.z.& relicta ſint duo puncta.h.t.in.d.e.z.dico q̃ iuncta linea ad.h.t.cadet intra lineam.d.e.z.ſi vero in rectam ipſi extra: Quoniam conus, cuius ſumitas punctũ.a.baſis autẽ circulus.b.g.ſecatur plano p axim,

relictaq;

relictaq; ſunt quædam puncta in eius ſuperficie ſcilicet.h.t.quæ non ſunt i latere triã-guli per axim,& linea ducta ab.h.ad.t.non ad.a.Iuncta igitur ſuper.h.t.linea intra Conum cadet & in linea ipſi extra,quare & intra.d.c.z.ſectionem.

℞ 18 m̃ 1 co
℞ 18 m̃ 1 co
℞ 324 p̃ ꝗ m̃ 36 co
18 co/ ℞ 324 p̃ ꝗ m̃ 36 co
54 co/ ℞ 324 p̃ ꝗ
18 m̃ ℞ 729
℞ 729 m̃ 6
℞ 256 m̃ 8
℞ 196 m̃ 9



20 m̃ 1 co
20 m̃ 1 co
℞ 400 p̃ ꝗ m̃ 40 co
20 co/ ℞ 400 p̃ ꝗ m̃ 40 co
60 co/ ℞ 400 p̃ ꝗ
30 m̃ ℞ 400
℞ 400 m̃ 10

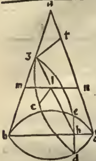
¶ Propoſitio, Vndecima.

SI conus plano ſecetur per axim, ſecetur autem & altero plano ſecanti baſim coni per rectam ad rectos exiſtentem baſi trianguli per axim, Et diameter ſectionis equidiſtans ſit vni laterum triãguli per axim,quæ a ſectione coni equidiſtans ducta eſt communi ſectioni ſecantis plani,& a baſi coni vſq; ad diametrũ ſectionis poterit contentum ſub recepta ſub ipſa a diametro ad ſumitatem ſectionis,& alius cuiuſdã lineę, vel rationem habet ad eam quę inter coni angulum eſt & ſumitatem ſectionis, quam quadratum quod a baſi trianguli per axim ad cõtentum ſub reliquis duabus triãguli lateribus, Vocetur autem talis ſectio Parabole.

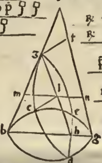
¶ Sit Conus cuius ſumitas punctũ.a.baſis autem.b.g.circulus,& ſecetur plano per axim & faciat ſectionem triangulum.a.b.g.ſecetur autem & altero plano ſecanti baſim coni per rectam.d.e.ad rectos exiſtentem.b.g.& faciat ſectionem in ſuperficie coni.d.z.e. diameter autem ſectionis.z.h.equidiſtans ſit vni laterum trianguli per axim ſcilicet.a. g.& a puncto.z.ducatur.z.t.linea ad rectos.z.h.& faciat ut qđ ab.b.g.ad id quod ſub a.g.ſic.z.t.ad.z.a.& relictum ſit quodam punctum in ſectione contingens & ſit.c.& per.c.ducatur.c.l.equidiſtans.d.e.Dico q; id quod fit ab.c.l.equale eſt illo quod ſub.t. z.l.Ducatur.n.per.l.linea.m.n.equidiſtans.b.g.eſt autem &.c.l.equidiſtans.d.e.planum igitur per.c.l.m.n.equidiſtans eſt plano per.b.g.d.e.ideſt baſi coni &.c.l.eſt cathetus ſuper.m.n.quoniam &.d.e.ſuper.b.g.quod igitur ab.c.l.fit,equale eſt illo quod ſub.m.l.n.& quoniam eſt ut quod ab.b.g.ad id quod ab.b.g.a.ſic.t.z.ad.z.a.quod autem ab.b.g.ad id quod ab.b.a.g.rationem habet compoſitam,ex quo quem habet.b.g. ad.g.a.&.b.g.ad.b.a.Igitur ratio.z.t.ad z.a.componitur ex ratione.g.b.ad.g.a.&.g. b.ad.b.a.Sed ut.b.g.ad.g.a.ſic.m.n.ad.n.a.ideſt.m.l.ad.l.z.ut igiť.b.g.ad.b.a.ſic.m. n.ad.m.a.ideſt.l.m.ad.m.z.& reliquę.l.n.ad.z.a.Ratio igitur.z.t.ad.z.a.cõponiť ex ratione.m.l.ad.l.z.&.n.l.ad.z.a. Compoſita autem ratio ex ratione.m.l.ad.l.z.&.l.n. ad.z.a.quæ eius eſt qđ ſub.m.l.n.quæ eius eſt quod ſub.m.l.n.ad id quod ſub.l.z.a. ut igitur.t.z.ad.z.a.ſic quod ſub.m.l.n.ad id quod ſub.l.z.a.ut autem.t.z.ad.z.a.lineæ

z.l. communis altitudinis acceptę, ſic quod ſub.t.z.l. ad id quod ſub.l.z.a. ut igitur quod ſub.m.l.n. ad id quod ſub.l.z.a. ſic quod ſub.t.z.l. ad id quod ſub.l.z.a. equale igitur eſt quod ſub.m.l.n. illo quod ſub.t.l.z. qđ autem fit ab.c.l. equale eſt eo, qđ ſub m.l.n. Igitur & qđ fit ab.c.l. equale eſt illo qđ ſub.t.z.l. Voceť aũt talis ſectio parabole.t.z. aũt ad quam poſſunt ductæ ordinatæ ad.z.b. diametrũ. Vocetur q; & recta.

℞ 48 m̃ ℞ 121 ℞ 24 m̃ 1 co p̃ ꝗ ℞ 1643 m̃ 1 co
p̃ ꝗ m̃ ꝗ ꝗ ℞ 24 m̃ 1 co p̃ ꝗ p̃ ꝗ m̃ ꝗ ꝗ
℞ 1463 p̃ ꝗ ℞ 576 p̃ ꝗ m̃ 48 co p̃ ꝗ ꝗ m ꝗ ꝗ p̃ 4
24 co / ℞ 576 p ꝗ m̃ 48 co p̃ ꝗ ꝗ
72 co / ℞ 576 p̃ ꝗ ꝗ
℞ 576 m ꝗ ꝗ



℞ 464 m̃ 4
℞ 369 m̃ 6
p̃ ꝗ m̃ 1 co
℞ 1564 p̃ 8
℞ 233 p̃ ꝗ

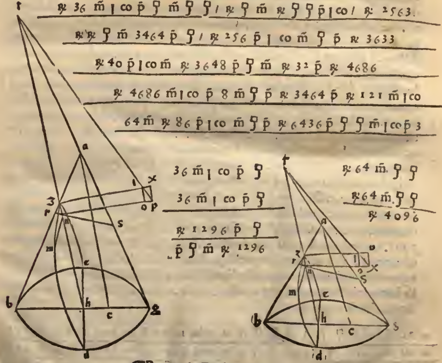


❡Propoſitio XII.

SI conus plano ſeceť per axim, ſeceť autem & altero plano ſecãti baſim coni per rectã ad rectos exiſtentẽ baſi trianguli ꝑ axim, & diameter ſectionis ꝑductus coincidat vni laterum triãguli ꝑ axim extra coni ſumitatẽ, q̃ a ſectione ducta eſt eq̃diſtãs cõmuni ſectiõi ſecãtis plani & baſi coni vſq; ad diametrũ ſectionis poterit id qđ ſuperficies adiacẽs ad quãdã lineã ad quã rõnẽ habet in linea manẽs diametro ſectiõis tangẽsq; angulũ extra triãgulũ quã quadratũ qđ fit adducta a ſumitate coni ad diametrũ ſectionis vſq; ad baſim triãguli ad cõtentũ ſub baſi ſectionibus, quas ſecit ducta latitudo habẽs receptã ſub ipſa a diametro ad extẽdẽs ſumitatẽ ſectionis ſpẽ ſimili & ſılr iacens cõtento ſub tangẽte extra angulũ triãguli & illius ad quã poſſunt ductę. Voceť aũt hęc ſectio hyperbole.

❡Sit Conus cuius ſumitas punctum.a. baſis autem circulus.b.g. & ſecetur plano per axim & faciat ſectionem trianglum.a.b.g. ſecetur autem & altero plano ſecanti baſim coni ad rectam.d.e. ad rectos exiſtentem.b.g. baſi trianguli.a.b.g. & faciat ſectionem in ſuperficie coni.d.z.e. lineam, Diameter autem ſectionis.z.h. productus coĩcidat vni laterum trianguli.a.b.g. ſcilicet.a.g. extra ſumitatem coni ad.t. & per.a. ducatur.a.c. equidiſtans diametro ſectionis, & ab.z. ducatur.z.l. ad rectos & faciat ut quod ab.c.a. ad id quod ſub.b.c.g. ſic.t.z. ad.z.l. & relictum ſit quodam punctum contigens in ſectione ſcilicet.m. & per.m. ducatur.m.n. equidiſtãs.d.e. & per.n. ducatur.n.x. equidiſtãs.z.l. & iuncta.t.l. producať vſq; ad.x. & per.l. &.x. ducantur.l.o. &.x.p. equidiſtãs z.n. Dico q;.m.n. poteſt.z.x. quod adiacet ad.z.l. latitudo habẽs.z.n. excedens ſpecie l.x. exiſtenti plano ſub.t.z.l. ducatur.n. per.n. linea.r.n.s. equidiſtãs.b.g. eſt autem & n.m. equidiſtans.d.e. planũ igitur per.m.n.r.s. equidiſtans eſt plano per.b.g.d.e. ideſt, baſi coni. Si igiť producať planũ ꝑ.m.n.r.s. ſectio circulus erit, cuiꝰ diameter.r.n.s. & eſt ad ipſam cathetus.m.n. qđ igiť ſub.r.n.s. eq̃le eſt illo qđ ab.m.n. & q̃m eſt ut qđ ab

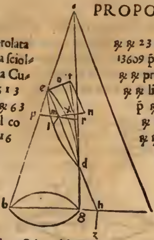
a.c.ad id quod ſub.b.c.g.ſic.t.z.ad.z.l.ratio eius quod ab.a.c.ad id quod ſub.b.c.g. componitur ex ratione quam habet.a.c.ad.c.g.&.a.c.ad.c.b. Igitur & ratio.z.t.ad.z. l.componitur ex ratione,quam habet.a.c.ad.c.g.&.a.c.ad.c.b.ſed ut.a.c.ad.c.g.ſic.t. h.ad.h g.ideſt.t.n.ad.n.s.vt autem.a.c.ad.c.b.ſic.z.h.ad.h.b.ideſt.z.n.ad.n.r.Ratio igitur.t.z.ad.z.l.cōponitur ex ratione.t.n.ad.n.s.& rōne,z.n.ad.n.r.cōpoſita aūt ratio.ex ratiōe.t.n.ad.n.s.&.z.n.ad.n.r. eius eſt quod ſub.t.n.z.eſt ad id quod ſub.s. n.r.& ut igitur id quod ſub.t.n.z.ad id quod ſub.s.n.r.ſic.t.z.ad.z.l.ideſt.t.n.ad.n.x. ſed ut.t.n.ad.n.x.lineæ.z.n.cōmunis altitudinis acceptæ, ſic quod ſub.t.n.z.ad quod ſub.z.n.x.& ut vtiq; quod ſub.t.n.z.ad id quod ſub.s.n.r.ſic & ad id quod ſub.x.n.z. quod vtiq; ſub.s.n.r.equale eſt illo quod ſub.x.n.z.quod autem fit ab.m.n. equale demonſtratum eſt eo quod ſub.s.n.r. Igitur quod ab.m.n.fit equale eſt eo quod ſub.x.n. z.quod autem eſt ſub.x.n.z.eſt parallelogramum.x.z.igitur.m.n.poteſt id quod.x.z. quod adiacet ad lineam.z.l.latitudinem habens.z.n.excedentem.l.x.ſimili exiſtenti illo quod ſub.t.z.l. vocetur autem talis ſectio hyperbole.d.z.autem ad quam poteſt ductę ad.z.h.ordinate voceturq; eadem & recta,tranſuerſa autem.z.t.



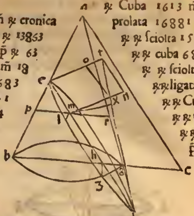
Propoſitio, Decimatertia.

SI Conus plano ſecetur per axim, ſecetur autem & altero plano coincidenti utriq; laterum trianguli per axim, nec ducto ad baſim coni, neq; ſubcontrarie, planum

℞ ℞ prolata Cronica ſciolta ligata Cubica 1613 p̃ 4 m̃ ℞ 63 p̃ ℈ m̃ l co ℞ 13916



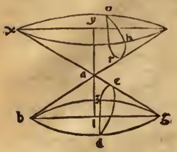
℞ ℞ 23683 p̃ ℈ m̃ ℞ cronica 13609 p̃ ℈ m̃ 40 p̃ ℞ 13863 ℞ ℞ prolata 6936 p̃ ℞ 63 ℞ ℞ ligata 10916 m̃ 18 p̃ ℞ ſciolta 8683 ℞ ℞ 436841 ℞ ℞ 1646 m̃ 4 ℞ Sciolta 1816

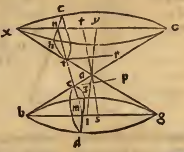


℞ Cuba 1613 m̃ ℞ prolata 1688 p̃ 4 ℞ ℞ ſciolta 15616 ℞ ℞ cuba 6849 ℞ ℞ ſciolta 13600 ℞ ℞ ligata 4866 ℞ ℞ Cronica 316 ℞ ℞ Cuba 261 ℞ ℞ ligata 91 p̃ ℈ m̃ ꝑ p̃

SI ſuperficies ad ſumitatē plano ſecentur non per ſumitatē, erit in vtraqꝫ ſuperficierū ſectio vocata hyperbole & duarū ſectionum diameter eadē erit, & ad quas poterunt ductę ad diametrū, equidiſtantes ei, quæ in baſi coni lineę equales & ſpēi tranſuerſum latus cōmune inter ſumitates ſectionū, vocenturqꝫ tales ſectiones contrapoſitę: Sint ad ſumitatē ſuperficies, quarū ſumitas punctū.a. & ſecentur plano non per ſumitatē & faciant in ſuꝑficie ſectiones.d.e.z.&.h.t.c. Dcio ꝙ vtraqꝫ ſectionū.d.c.z.&.h.t.c. eſt ea quæ vocať hyperbole. Sit.u.circulus per quē fertur linea deſcribens ſuperficiē & ſit.b.d.g.z.& ducať in ſuperficie per.z.h.o.c. planū ipſi equidiſtāte Cōmunes aūt ſectiones ſectionū.h.t.c.&.z.e.d.& circulorum ſcꝫ.z.d.&.h.c. erunt equidiſtantes, axis aūt ſit conicæ ſuꝑficiei linea.l.a.y. centra aūt circulorū ſint.l.&.y.& ab.l.ad.z.d. catherus ducta producať ad puncta.b.g.& per.b.g.& axim planū producatur, faciet ſectiones in circulis lineas.x.o.&.b.g. eq̄diſtantes in ſuperficie aūt lineas.b.a.c.&.g.a.x. eritqꝫ &.x.o. ad rectos.h.c. qm̃ &.b.g. eſt ad rectos.z.d.& eſt vtraqꝫ equidiſtans, & qm̃ planum per axim ſectionibus coīcidit ad pūcta.m.&.n. intra lineas, manifeſtū ꝙ & lineas ſecat planū, ſecet in punctis.t.&.e. puncta igiť.m.e.t.n. ſunt in plano ꝑ axim, & in plano in quo ſunt lineæ, recta igiť eſt linea.m.c.t.n.& manifeſtum ꝙ &.x.t.a.g. ſunt in linea ſimilr̃qꝫ &.b.e.a.o. ſunt.n. in ſuꝑficie conica & i plano ꝑ axim: ducanť a pūctis.t.& e. lineæ.t.r.&.e.p. ad rectos.t.e.&,p.a. ducať.s.a.t. eq̄diſtans.m.e.& faciat vt qđ ab a.s. ad id qđ ſub.b.s.g. ſic.t.e. ad.e.p. utqꝫ qđ ab.a.t. ad id qđ ſub.o.t.x. ſic.e.t. ad.t.r. qm̃ igitur conus, cuius ſumitas punctū.a. baſis aūt circulus.b.g. ſecatus eſt plano ꝑ axim & fecit ſectionē triāgulū.a.b.g. ſecatuſqꝫ eſt & altero planū ſecanti baſim coni ꝑ rectā.d.m.z. ad rectos exiſtētē.b.g.& fecit ſectionē in ſuꝑficie.d.e.z. Diameterqꝫ.m.e. ꝑ ducta coīciditvni laterū triāguli ꝑ axim extra ſumitatē coni, & ꝑ punctū.a. ducta eſt a.s. eq̄diſtans diametro ſectiōis.e.m.& ab.e. ducta eſt.e.p. ad rectos.e.m.& eſt ut qđ ab.a.s. ad id qđ ſub.b.s.g. ſic.e.t. ad.e.p. Igiť ſectio.d.e.z. hyperbole eſt, &.e.p. ad quā pn̄t ductę ad.e.m. ordinate, tranſuerſum aūt ſpeciei latus eſt.t.e. ſimilr̃qꝫ &.h.t.c. hyꝑbole eſt: cuius diameter.t.n.&.t.r. ad quā poſſunt ductæ ordinate ad.n. tranſuerſum aūt ſpeciei latus.t.e. eſt dico ꝙ.t.r. equalis eſt.e.p. qm̃ equidiſtans.b.g. eſt.x.o. eſt ut.a.s. ad s.g. ſic.a.t. ad.t.x.& ut.a.s. ad.s.b. ſic.a.t. ad.t.o. ſed ratio.a.s. ad.s.g. cū ratione.a.s. ad.s.

b.quæ eius eſt quod ab.a.s.eſt,ad id quod ſub.b.s.g. Ratioq;.a.t.ad.t.x. cum ratione a.t.ad.t.o.qui eius eſt quod ab.a.t.eſt,ad id quod ſub.x.t.o.eſt igitur ut quod ab.a.s.ad id quod ſub.b.s.g.ſic quod ab.a.t.ad id quod ſub .x.t.o.& eſt quidem ut quod ab .a.s. ad id quod ſub.b.s.g.linea.t.e.ad.e.p.ut autem quod ab.a.t.ad id quod ſub .x.t.o.linea.t.e.ad.t.y.& ut.t.e.ad.e.p.linea.e.t.ad.t.y.equalis igitur eſt linea.e.p.lineę.t.y.



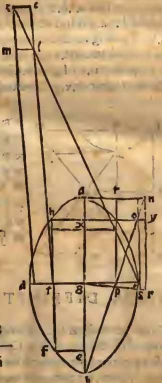


Propoſitio,Decimaquinta.

SI A ſectione per medium diametri deſectionis ducta linea ordinate producatur in vtramq; partem vſq; ad ſectionem & faciat ut producta ad diametrum ſic diameter ad quandã lineam,quæ ducta ſit a ſectione ad productam equidiſtans diametro, poterit adiacens ad tertiam proportionatam latitudinem habens lineam ſcilicet ſub ipſa receptam ad ſectionem deficiens ſpecie ſimili contento ſub ea ad quam ducuntur & eius ad quam poſsunt,& prodcta vſq; ad alteram partem ſectionis per medium ſecabitur ſub ea ad quam ductę ſunt. Sit deſectio cuius diameter.a.b.& ſecetur.a.b.per medium ad pũctum.g.& per.g. ducatur ordinate & producatur .d.g. e.in vtramq; vſq; ad ſectionem & a puncto.d.ducatur .d.z.ad rectos.d.e. & faciat ut d.e.ad.a.b.ſic.a.b.ad.d.z.& relictum ſit punctum.h.in ſectione & per.h. ducatur.h. t.equidiſtans.a.b.& coniungantur.e.z.& per.t.ducatur.t.l.equidiſtans.d.z. & per.z. &.l.ducatur.z.c.&.l.m.equidiſtantes.t.d.Dico q.h.t.poteſt quod .d.l. quod adiacet ad.d.z.latitudinem habẽs.d.t.Deficiens ſpecie.l.z.ſimili exiſtenti eo quod ſub.e.d.z. ſit.n.a.n.ad quam poſſunt ductę ordinate ad.b.n.& per.h.ducatur.h.x. equidiſtans d.e.& per.x.g.ducantur.x.o.&.g.p.equidiſtantes.a.n.& per.n.o.p.ducant.n.y.&.o. s.&.t.p.equidiſtantes.a.b.igitur quod ab.d.g. equale eſt.a.p. & quod ab .h.x.equale eſt.a.o.& quoniam eſt ut.b.a.ad.a.n.ſic.b.g.ad.g.p.&.p.t.ad.t.n. equalis igitur eſt b.g.lineę.g.a.ideſt.p.t.&.g.p.lineę.t.n.igitur eſt.a.p. equale .t.y.& .z.t.equale.t.y. & quoniã.o.t.eſt equale.o.r.Cõmune autem eſt.n.o.Igitur.t.y.equale eſt.n.s.ſed.t.y. eſt equale.t.x.quare.t.x.eſt equale.n.s.Commune autem eſt.t.s.totum igitur.n.p. ideſt.p.a.equale eſt.a.o.cum.p.o. quare.p.a.ſuperat .a.o.per .o.p.& eſt.a.p. equale eo quod ab.g.d.&.a.o.equale eo quod ab.x.h.&.o.p.equale eo quod .o.s.p.quod igitur ab.g.d.ſuperat quod ab.h.x.per id quod ſub.o.s.p.& quoniam.D.e.ſecata eſt per equalia in puncto.g.& in inequalia in puncto.t.quod igitur ſub.e.t.d.cum eo quod ab.g.t. ideſt.x.h.equale eſt eo quod ab.g.d.quod igitur ab.g.d.ſuperat quod ab.x.h.per id quod ſub.e.t.d.ſuperauit quod ab.g.d.id quod ab.h.x.per id quod ſub.o.s.p. quod

igitur ſub.e.t.d.equale eſt eo quod ſub.o.s.p. & quoniam eſt ut.d.e.ad.a.b. ſic.a.b.ad d.z.eſt igitur ut.d.e.ad.d.z.ſic quod ab.d.e.ad id quod ab.a.b.ideſt quod ab.g.d.ad id quod ab.g.b.& eſt quod ab.g.d.equale quod ſub.p.g.a.ideſt quod ſub.p.g.b.& e.d.ad.d.z.ideſt ut.e.t.ad.t.l.ideſt quod ſub.e.t.d.ad id quod ſub.d.t.l.ſic quod ſub p.g.b. ad id quod ab.g.b.ideſt quod ſub.p.s.o. ad id quod ab.o.s.& eſt quale quod ſub.e.t.d.eo quod ſub.p.s.o. equale igitur & quod ſub.d.t.l.quod ab.o.s. ideſt eo quod ab.h.t.Igitur.h.t.poteſt quod.d.l.quod adiacet ad.d.z. deficiens ſpecie.z.l.ſimili exiſtenti eo quod ſub.e.d.z.Dicoq́ꝙ & .t.h.producta vſq ad alteram partem ſectionis per medium ſecabitur ab.d.c.producatur.n.& coincidat ſectioni ad.f.& per f.ducatur.f.x.equidiſtans.h.x.& per.x.ducatur.e.t.equidiſtans.a.n.& quoniam.h.x. equalis eſt.f.x.equale igitur quod ab.h.x.eo quod ab.f.x.ſed quod ab.h.x.equale eſt eo quod ſub.a.x.o.quod autem ab.f.x.equale eſt eo quod ſub.a.e.x.proportionatum igitur eſt ut.o.x.ad.e.x.ſic.e.a.ad.a.x.& eſt ut.o.x.ad.e.x.ſic.x.b.ad.b.e.& ut.e.a.ad.a.x.ſic.x.b.ad.b.e.& ut.e.x.ad.x.a.ſic.e.x.ad.e b.igitur eſt.a.x.equalis.e.b.eſt autem &.a.g.equalis.g.b.& reliqua.ergo.x.g.eſt equalis.g.e.quare &.h.t.lineę.t.f. Igitur.t.h.producta vſq ad alteram partem ſectionis per medium ſecabitur ab.d.t.

℞ 54 p̄ ℞ Cuba
℞ 6688 p̄ 4 m̄ ꝗ ꝗ
℞ prolata 3686
℞ Cronica 22683
p̄ ꝗ ꝗ m̄ ℞ 684 p̄ 2
℞ prolata 13916
℞ Cuba 22683
℞ 88 p̄ ꝗ m̄ 1 co p̄ 4
℞ ℞ 15916 p̄ 83
℞ ligata 30888 p̄ 4
℞ ſciolta 144916
℞ ℞ Cuba 12916 $\frac{2}{13}$
℞ ℞ Cronica 10516
℞ ℞ ligata 15608 $\frac{5}{14}$
℞ 38 $\frac{1}{4}$ p̄ ꝗ m̄ 1 co $\frac{15}{16}$
℞ ℞ Cuba 6608 $\frac{13}{16}$
℞ ℞ prolata 15603
℞ ℞ 12 $\frac{1}{4}$ m̄ ℞ 17 $\frac{7}{11}$
℞ ℞ ligata 15613 m̄ 4
℞ ℞ Cronica 16913 $\frac{1}{11}$
℞ ꝗ m̄ ℞ 1 co p̄ $\frac{3}{11}$ p̄ 8
℞ ℞ ligata 15613 m̄ 8 p̄ $\frac{1}{11}$
℞ ℞ Cronica 22613 p̄ ꝗ m̄
℞ 4916 p̄ ꝗ m̄ ℞ 4900
℞ ℞ Cuba 6662 m̄ ℞ prolata 15316 p̄ ꝗ m̄ ℞ ℞ 40916 p̄ 8 m̄ $\frac{11}{10}$

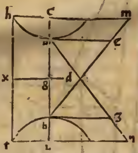




¶Propoſitio, Decimaſexta.

SI per ſectionem per medium tranſuerſi lateris contrapoſitarum ſectionum ducatur quędam linea ordinate applicata, diameter erit cõiuncta pręexiſtenti diametro. Sint contrapoſitę: quarum diameter .a.b.& ſecetur, a.b. per medium in puncto.g. & per.g. ducatur ordinate.g.d. applicata. Dico q͂ .g.d. coniuncta .a.b. diameter eſt. ſint.n ad quas poſsunt applicate .a.e.& .b.z. lineę. & cõiunctę.a.z.&.b.e. producantur. Et relictum ſit in altera ſectionum quodam contingens punctum.h. & per .h. ducatur .h.t. equidiſtans .a.b. &.ab.h.t. ducantur ordinate.h.c. &.t.l & per c.l. ducantur .c.m.&.l.n. equidiſtantes.a.e.&.b.z. quoniam igitur.h.c. eſt equalis.t.l. equale igitur eſt & id quod fit ex .h.c. eo quod fit ex.t.l. ſed quod fit ex .h.c. equale eſt eo quod eſt ſub.a.c.m.& quod fit ex.t.l. equale eſt eo quod eſt ſub.b.l.n. Igitur illud quod eſt ſub.a.c.m. equale eſt eo quod eſt ſub.b.l.n.& quoniam .a.e eſt equalis .b.z. eſt ergo ut .a.e.ad..a.b. ſic b.z. ad .b.a. ſed ut eſt .a.e. ad.a.b. ſic eſt .m.c. ad .c.b.& ut eſt.z.b.ad.b.a. ſic.n.l.ad.l.a. Igitur ut eſt.m.c.ad .c.b. ſic.n.l.ad .l.a. Sed ut .m.c. ad.c.b. recepta.e.a. communi altitudine ſic eſt illud quod eſt ſub.m.c.a.ad id quod eſt ſub.b.c.a.& ut eſt.n.l.ad.l.a. accepta.b l. communi altitudine ſic illud quod eſt ſub.n.l.b. ad illud qđ eſt ſub a.l.b. Igitur ut eſt illud qđ eſt ſub.m.c.a.ad illud quod.b.c.a. ſic quod eſt ſub .n.l.b. ad id quod eſt ſub.a.l.b.& viciſſim vt quod eſt ſub.m.c.a.ad id quod eſt ſub.n.l.b. ſic qđ eſt ſub.b.c.a.ad id qđ eſt ſub.a.l.b.& illud qđ eſt ſub.m.c.a. eſt equale eo qđ eſt ſub.n.l.b. equale igitur eſt illud quod eſt ſub.b.c.a. Illo qđ eſt ſub a.l.b. Igitur &.a.c. equalis eſt.l.b. eſt autem &.a.g. equalis g.b. Igitur & tota .c.g. tote g.l. eſt equalis, quare &.h.x. equalis erit.x.t. Igitur.h.t. ſecata eſt per medium ab.z.g.d. & eſt equidiſtans.a.b. diameter igitur eſt.x.g.d. coniuncta.a.b.

℞ ℞ Cuba 30683
p̄ ℞ prolata 15516
℞ ℞ ligata 14613 p̄ $\frac{1}{11}$
m̄ ℞ ℞ Cronica 616
℞ ℞ Sciolta 15616
m̄ ℞ ℞ Cuba 1686 $\frac{2}{15}$
p̄ ℞ ℞ 148613 p̄ 8



℞ ℞ Cronica 10616 p̄ $\frac{1}{4}$
℞ ℞ prolata 616 p̄ ℞ $\frac{9}{15}$
℞ ℞ ligata 621 p̄ $\frac{30}{60}$
℞ ℞ Cubica & prolata 6824
m̄ ℞ 8996 p̄ 8
℞ ℞ ligata 14616 p̄ $\frac{9}{15}$
℞ ℞ Cubica & quadrata 15613
m̄ ꝗ p̄ ℞ 613

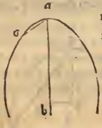
SECVNDA DIFFINITIO.

HYperboles & defectionis per medium ſectio diametri centrum ſectionis vocetur. Quæ autem a centro ad ſectionem ducitur, Ex centro ſectionis. Similiterq; & contrapoſitarum ſectio per medium tranſuerſi lateris, centrum vocetur. Ducta autem per centrum ordinate applicata, mediamq; rationem habens laterum ſpeciei, & per medium ſecata a centro, Secunda Diameter vocetur.

ℂPropoſitio, Decimaſeptima.

SI in Coni ſectione a ſumitate lineę ducatur linea ordinate applicata extra ſectionem cadet. Sit Coni ſectio: cuius diameter. a.b. Dico ꝙ ducta, linea a ſumitate. i. punctum. a. ordinate applicata, extra ſectionem cadet. ſi. n. poſſibile ſit cadat intus ut. a. g. quoniam in coni ſectione relinquit̃ contigens punctum. g. ducta igitur a puncto. g. intra punctum ſectionis ordinate applicata coincidit. a. b. diametro, & per medium ſecabitur ab ea, Igitur. a. g. producta per medium ſecabitur linea. a. b. quod eſt abſurdum, producta. n. a. g. cadit extra ſectionē, nō igitur linea ducta a puncto. a. ordiate applicata ītra lineā cadet, cadet vtiq; extra, quapropter attigit ſectionē.

℞ ℞ ligata 1513/3664 m̃ ℞ 38
℞ ℞ Cronica 4634/10654 p̃ 2
℞ ℞ prolata 6666/5555 p̃ 4
℞ ℞ Cronica 6513/4653 p̃ 6
℞ ℞ Cuba 10640/30916 p̃ 1/12
℞ ℞ Cronica 5936/15354 p̃ 1

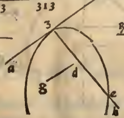


℞ ℞ prolata 4636/10560 m̃ ℞ p̃ 4
℞ ℞ Cubica quadrata 10641/15916
℞ ℞ Cronica & ligata 8643/15916
℞ ℞ Cronica ſciolta 15613/10563
℞ ℞ Cubica quadrata 9953/6913

ℂPropoſitio, Decimaoctaua.

SI Coni ſectioni linea coincidens producta in vtramq; extra ſectionem cadat, relictumq; ſit quodam punctum intra ſectionem & per ipſum equidiſtans ducatur coincidenti ducta ſi producatur, in vtramq; coincidet ſectioni: Sit coni ſectio, & coincidens ipſi ſit linea. a.z.b. quæ producta in vtramq; partem extra ſectionē cadet, & relictum ſit quodam punctum intra ſectionem ſcilicet. g. & per. g. ducatur. g. d. equidiſtans. a. b. Dico ꝙ. g. d. producta ī vtramq; coincidet ſectioni, relictum. n. ſit quodam punctum in ſectione. ſcilicet. e. & coniungatur. e. z. & quoniam. a. b. equidiſtans eſt. g. d. & quedam linea. e. z. coincidit. a. b. Igitur & . g. d. producta coincidet. e. z. & ſiquidem inter. e. z. manifeſtum ꝙ & ſectioni coincidit, ſi autem extra punctum e. prius ſectioni coincidet. Igitur. g. d. producta vſq; ad partes. d. e. coincidit ſectioni, ſimiliterq; demonſtrabimus & vſq; ad. z. a. b. producta coincidet. g. d. igitur producta in vtramq; coincidet ſectioni.

℞ 4643 ℞ 8864 p̃ ℞ 24
℞ ℞ 8366 40613 313
℞ 3643 p̃ ℞ 613
8613 4063



b ℞ 6636 p̃ ℞ 8993
8613 10613
℞ Cuba 1636 p̃ 4816
8863 6713

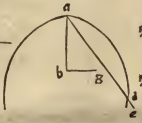
ℭPropoſitio, Decimanona.

IN omni coni ſectione, quæ a Diametro ordinate applicata ducta eſt, coincidet ſectioni: Sit coni ſectio: cuius diameter. a. b. & relictũ ſit quodã punctum in diametro ſcilicet. b. & per. b. ordinate applicata ducatur. a. b. Dico q. b. g. producta coincidet ſectioni, relictum. n. ſit quodam punctum in ſectione ſcilicet. d. eſt autem &. a. in ſectione, Igitur linea ab. a. ad. d. Iuncta intra ſectionem cadet, & quoniam ducta linea ab. a. ordinate applicata cadet extra ſectionẽ, & coincidit ipſi. a. d. & eſt. b. g. equidiſtans applicatæ, Igitur &. b. g. coincidet. a. d. & ſi inter puncta. a. d. manifeſtum q ſectioni coincidet, ſi autem extra. d. ut ad. e. prius ſectioni coincidet, Igitur ducta linea a puncto. b. ordinate applicata coincidet ſectioni.

℞ ℞ prolata 6813

p̄ ℞ $\frac{6863}{10916}$ p̄ ℞ $\frac{8614}{13613}$

℞ ℞ $\frac{8363}{110913}$ m̄ ℞ $\frac{3683}{4913}$



℞ $\frac{9633}{14612}$ m̄ ℞ $\frac{6666}{8613}$ p̄ $\frac{3}{12}$

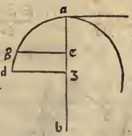
℞ Cuba $\frac{6684}{8999}$ m̄ ℞ $\frac{333}{486}$

ℭPropoſitio, Vigeſima.

SI in parabolea ſectione ducantur duo lineę ad diametrum ordinate, erit ut quadrata, quæ ab ipſis fiunt ad inuicem ſic ſecatę ſub ipſis a Diametro ad ſumitatem ſectionis. Sit parabole: cuius diameter. a. b. & relicta ſint duo puncta ſcilicet. g. &. d. in ipſa, & ab. g. d. ordinate ducantur ad. a. b. lineæ. g. e. &. d. z. Dico q eſt ut illud quod fit ex. d. z. ad id quod fit ex. e. g. ſic. z. a. ad. a. e. Sit. n. ad quam poſſunt ductę a. h. equale igitur eſt quod fit ex. d. z. eo quod eſt ſub. z. a. h. & quod fit ex. g. e. eo quod eſt ſub. e. a. h. eſt vtiq ut id quod fit ex. d. z. ad id quod fit ex. g. e. ſic quod eſt ſub. z. a. h. ad id quod ſub. e. a. h. ſed ut id quod eſt ſub. z. a. h. ad id quod eſt ſub. e. a. h. ſic. z. a. ad a. e. & ut igitur quod fit ex. d. z. ad id quod fit ex. g. e. ſic. z. a. ad. a. e.

℞ ℞ $\frac{8773}{9666}$ m̄ ℞ $\frac{13686}{30613}$

℞ ℞ prolata $\frac{47966}{63616}$ p̄ $\frac{1}{15}$



℞ $\frac{13616}{15833}$ m̄ ℞ plata $\frac{513}{463}$

℞̄ ligata $\frac{6663}{7613}$ m̄ ℞ $\frac{464}{713}$

Propoſitio, Vigeſimaprima.

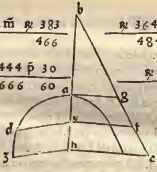
SI ab hyperbole vel defectione vel circuli circumferentia lineę ducantur ordinate ad diametrum erūt ex ipſis quadrata ad contentas ſuperficies ſub receptis ab ipſis vltra terminos tranſuerſi lateris ſpeciei vt ſpeciei rectum latus ad tranſuerſum, ad inuicemq; vt contente ſuperficies ſub receptis lineis vt dictum eſt. Sit hyperbole vel defectio vel circuli circumferentia, cuius diameter.a.b.&.a.g. ad quam poſſunt ductę,& ducantur ordinate ad diametrum.d.e.&.z.h. Dico q; eſt vt quod ex.z.h.ad id quod ſub.a.h.b.ſic.a.g.ad.a.b. vt autem quod ex.z.h. ad id quod ex .d.e.ſic id quod eſt ſub.a.h.b.ad id quod eſt ſub.a.e.b. coniungatur .b.g. diuidens ſpeciem, & per.e.h. ducatur .e.t.&.h.c.equidiſtātes,.a.g. equale igitur eſt quod fit ex .z.h.eo quod eſt ſub.c.h.a.& quod fit ex.d.e. eo quod eſt ſub.t.e.a.& queniam eſt vt.c.h.ad h.b.ſic.g.a.ad.a.b.& vt.c.h.ad.h.b.accepta.a.h.communi altitudine, ſic id quod eſt ſub.c.h.a.ad id quod eſt ſub.b.h.a.vt igitur.g.a.ad.a.b. ſic quod ſub.c.h.a. id eſt id quod ex.z.h.ad id quod ſub.b.h.a.per eadem vtiq; eſt vt id quod fit ex.d.e.ad.b.e.a. ſic.g.a.ad.a.b.& vt quod fit ex.z.h.ad id quod ſub.b.h.a ſic quod ex.d.e.ad id quod eſt ſub.b.e.a. viciſſim vt quod fit ex.z.h.ad id quod fit ex.d.e.ſic quod ſub.b.h.a. ad id quod ſub.b.e.a.

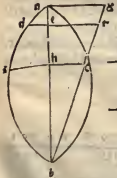
℞℞ 8663 p̄ ℞ 9686 m̄ ℞ 383 / 13613 30613 466

℞ 3643 m̄ ℞℞ 83896 / 4841 163913

℞℞ 14616 p̄ ℞ 44444 p̄ 30 / 18486 62666 60

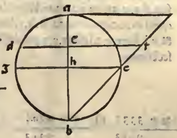
℞ 243816 p̄ ℞ 6863 / 363841 8942





℞ 4333 m̄ ℞℞ 8963 / 6991 9338

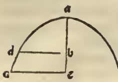
℞ 144963 p̄ ℞℞ 6813 / 166813 8993



Propoſitio, Vigeſimaſecunda.

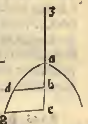
SI Parabolem vel Hiperbolē linea ſecet ad duo pūcta non coincidēs diametro intus producta coicidet diametro ſectiōis extra ſectiōes. Sit parabole vel hypbole, cuius

diameter.a.b.& ſecet quedam linea ſectionem ad duo puncta ſcilicet.g.d.Dico q̄.g.d.producta coincidet.a.b.extra ſectionem ducantur ab.g.d. ordinate.g.e.&.d.b. ſitq̄ primum ſectio parabole:quoniam igitur in Parabole eſt vt quod fit ex.g.e.ad id quod fit ex.d.b.ſic.e.a.ad.a.b.ſed.a.e. maior eſt.a.b.maior igitur & quod fit ex.g.e. eo quod fit ex.d.b.quare &.g.e.maior eſt.d.b.& ſunt equidiſtantes,Igitur &.g.d.producta coincidet.a.b.Diametro extra ſectionem.Sed ſit hyperbole quoniam igitur in hyperbole eſt vt quod ex.g.e.ad id quod fit ex.b.d.ſic quod ſub.z.e.a.ad id quod ſub z.b.a.maior vtriq̄ & quod fit ex.g.e.eo quod ex.d.b.& ſunt equidiſtantes,Igitur &.g.d.producta,coincidet diametro ſectionis extra ſectionem.



℞ 16964 p̄ ℞℞ 4893 m̄ ℞ 8688
22616 7616 10866

℞ 13893 m̄ ℞℞ 18881 p̄ ℞ 443
14616 22416 616

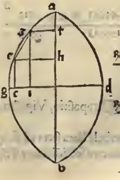


Propoſitio, Vigeſimatertia.

SI defectionem linea ſecet inter duas poſita diametros producta coincidet vtriq̄ diametrorum extra ſectionē.Sit defectio,cuius diametri.a.b.&.g.d & ſecet quę dam linea ſectionem ſcilicet.e.z.poſita inter.a.b.&.g.d.diametros: Dico q̄.e.z. producta coincidet vtriq̄.a.b.&.g.d.extra ſectionem.ducantur.n.ab.e.z.ordinate.h.e. &.z.t ad.a.b.&.e.c.&.z.l.ad.d.g.eſt vtriq̄ vt quod fit ex.e.h ad id quod fit ex.z t.ſic quod eſt ſub b.h.a.ad id quod eſt ſub.b.t.a.ſed vt quod fit ex z l.ad id quod fit ex.e.c. ſic quod eſt ſub.d.l.g.ad id quod eſt ſub d c.g.& eſt q͞d eſt ſub.b.h.a.maius eo quod eſt ſub.b t a.propius.n.h.ſectioni per medium:quod autem eſt ſub.d.l.g eo quod eſt ſub.d.c.g.maius itaq̄ quod fit ex.h.e.eo quod fit ex.z.t.& quod fit ex.z.l.maius eo quod ex.e.c.maior ergo &.h.e.linea,z.t.&.z.l.linea.e.c.& eſt.h.e.equidiſtans.z.t. &.z.l.lineę.e.c.Igitur.e.z.producta coincidet vtriq̄ diametrorum.a.b.&.g.d.extra ſectionem.

℞℞ 3333 m̄ ℞℞ 4894
9613 9913

℞℞ 15981 p̄ 3864 p̄ 15
20963 4681 30



℞ 4789 m̄ ℞℞ 8941
9413 10313

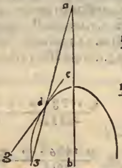
℞ 47983 p̄ ℞ 30641
63814 47913

Propoſitio, Vigeſimaquarta.

SI Parabole vel hyperbole linea ad vnum punctum cadens producta in vtramq; extra ſectionem cadet, coincidet diametro. Sit Parabole vel hyperbole cuius diameter .a.b. & coincidet ipſi linea .g.d.e. ad punctum .d. & producta in vtráq; extra ſectionẽ cadet: Dico q; coincidet diametro .a.b. relinquatᵣ .n. quodã pũctũ in ſectione, & ſit .z. & cõiungatᵣ .d.z. Igitᵣ & .d.z. pducta coincidet diametro ſectiõis, coincidat ad pũctũ .a. & eſt .g.d.e. iter ſectionẽ, & .z.d.a. Igitᵣ & .g.d.e. pducta coincidet diametro extra ſectionẽ.

℞ ℞ 3663 p̄ 16 m̄ ℞ 12516
4816 55 14688

℞ ℞ 16816 p̄ 32 m̄ ℞ 8684
22481 45 10916



℞ 44814 p̄ 45 m̄ ℞ 563
63917 63 645

℞ 13481 p̄ 37 m̄ ℞ 8912
18662 85 13776

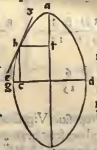
Propoſitio, Vigeſimaquinta.

SI defectioni linea coincidens intra duas diametros producta in utráq; extra cadet ſectionem, coincidet utriq; diametrorum.

Sit defectio, cuius diametri .a.b. & .g.d. & huic coincidat quædã linea .e.z. inter duas diametros ad .h. & producta in utráq; extra ſectionem cadet. Dico q; .e.z. cadet utriq; .a.b. & .g.d. ducatᵣ ab .h. ad .a.b. & .g.d. ordinate .h.t. & .h.c. quoniã equidiſtans eſt .h.c. lineæ .a.b. coincidit aũt quædã linea .h.z. lineæ .h.c. coĩcidet utiq; .a.b. ſimiliter utiq; & .e.z. coincidet .g.d.

℞ ℞ 47912 p̄ 35 m̄ ℞ 43
83386 100 65

℞ ℞ 19813 p̄ ℞ 8647
33481 10916



℞ 18733 p̄ ℞ 43914
22936 84991

℞ 14931 p̄ ℞ 13863
33907 15463

Propoſitio, Vigeſimaſexta.

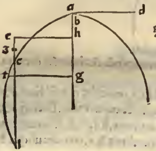
SI Parabole vel hyperbole linea ducatur ad diametrũ ſectionis, coincidet ſectioni ad unum ſolum punctum.

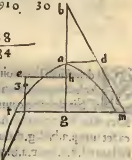
Sit prius Parabole cuius diameter .a.b.g. recta aũt .a.d. & ducatur .e.z. equidiſtans .a.b. Dico q; .e.z. producta coincidet ſectioni, relinquatur .n. quodam punctũ in e.z. qđ ſit .e. & ab .e. ordinate applicata ducatᵣ .t.h. & ſit qđ eſt ſub .d.a.g. maius eo qđ ſit ex .h.e. & a puncto .g. ordinate ducatᵣ .g.t. qđ igitᵣ ſit ex .t.g. eq̃le eſt qđ ſub .d.a.g.

maius vtiq; quod ſub.d.a.g.eo quod ex.e.h.maius ergo & quod ex.t.g.eo quod ex.e.h.maior Igitur &.t.g.linea.e.h.& erunt eq̃diſtãtes.e.z. igitur producta ſecat.t.g.quare ſectioni coincidet,coincidat ad.h.Dico q; & ad vnum ſolum punctũ.e.cadet, Si.n. poſſibile cadet & ad punctum.l.quoniam igitur Parabolem linea ſecet ad duo puncta producta:coincidet Diametro ſectionis,quod eſt abſurdum Subiacet.n. equidiſtans. Igitur.e.z.producta ad vnum ſolum punctum coincidit ſectioni. Sit vtiq; ſectio hyperbolæ, tranſuerſum autem ſpeciei lateri ſit.a.b.recta autem.a.d.& coniungatur.d.b.& producatur eiſdem igitur inſtructis ducatur .g.m.a puncto.g. equidiſtans.a d. quoniam igitur quod eſt ſub.m.g.a.maius eſt eo quod eſt ſub .d.a.g.& eſt id quod fit ex.g.t,equale eo quod eſt ſub.m.g.a.quod autẽ eſt ſub.d.a.g. maius eo quod fit ex.h.e,maior vtiq; & quod fit ex.g.t,eo quod fit ex.e.h.quare & .g.t.maior eſt.e.h. per eadem prius ea continget.

℞ 15786 p̄ ℞ 87933 p̄ 4
20836 180910 30

℞ 14864 p̄ ℞ 468
22916 684





℞ ℞ 19677 p̄ ℞ 14331 p̄ 3
33914 18681 12

℞ 8943 p̄ ℞ 11113 p̄ 18
133414 15912 35

℞ ℞ 48972 p̄ ℞ 15612 p̄ 6
68912 32485 15

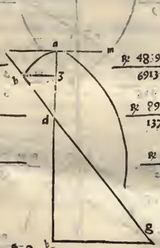
℞ 15812 p̄ ℞ 43888 p̄ 40
45916 63981 63

¶ Propoſitio, Vigeſimaſeptima.

SI Paraboles diametrum linea ſecet,in vtramq; coincidet ſectioni.

¶ Sit Parabole, cuius diameter.a.b.& hanc ſecet quędam linea intra ſectionẽ quę ſit.g.d. Dico q;.g.d.producta i vtraſq; partes coicidet ſectioni.ducatur.n. quędam a puncto.a.ordinate applicata, quę ſit.a.e. Igitur.a.e.extra ſectionem cadet. vel eſt vtiq;.g.d.equidiſtans.a.e.vel non, Si igitur equdiſtans eſt ipſi ordinate applicatur,quare producta in vtrãq; coincidet ſectioni:nõ ſit vtiq; equidiſtãs.a.e.Sed pducta coincidet.a.e.ad.e.q; igiť ſectioni coincidit ad partes i quas eſt.e.manifeſtũ.Si.n. a.e.coincidit,multũ prius ſecet ſectionẽ. Dico q; & in alias partes pducta coincidit ſectioni. Sit.n.ad quã poteſt.m.a.& ordinate.e.z.& ſit qď ex.a.d.eq̃le eo qď ſub.z.a.b.

& ordinate.b.c.cadat.d.g.ad.g.quoniam equale eſt quod eſt ſub.z.a.b.eo quod fit ex a.d.eſt vt.a.b.ad.a.d.ſic.d.a.ad.a.z.& reliqua ergo.b.d.ad reliquam.d.z.eſt vt.b.a.ad.a.d.& vt quod fit ex.b.d.ad id quod ex.z.d.ſic quod fit ex.b.a.ad id quod fit ex.a.d.quoniam autem equale quod fit ex.a.d.eo quod eſt ſub.b.a.z.ſic quod fit ex.a.b.ad id quod fit ex.a.d.id eſt quod fit ex.b.d.ad id quod fit ex.d.z.vt autem quod fit ex.b.d.ad id quod fit ex.d.z.ſic quod fit ex.b.g.ad id quod fit ex.z.h.vt autem.a.b.ad a.z.ſic quod eſt ſub.b.a.m.ad id quod eſt ſub.b.a.m ad id quod eſt ſub.z.a.m.vt igitur quod fit ex.b.g.ad id quod fit ex.z.h.ſic quod eſt ſub.b.a.m.ad id qđ eſt ſub.z.a.m.& inuicem,vt quod fit ex.b.g.ad id quod eſt ſub.b.a.m.ſic quod fit ex.z.h.ad id quod eſt ſub.z.a.m.quod autem fit ex.z.h.equale eſt eo quod eſt ſub.z.a.m.per ſectionem, Igitur & quod fit ex.b.g.equale eo quod eſt ſub.b.a.m.& recta quidē eſt.a.m.tranſuerſa autem.a.b.ordinate autem.b.g.Igitur ſectio uenit per.g.& coincidit ſectioni linea.g.d.ad punctum.g.



℞ ℞ 4716 p̄ ℞ 8683 / 6384 12513

℞ 4859 p̄ ℞ 30643 p̄ $\frac{15}{63}$ / 6913 63486

℞ ℞ 15823 p̄ ℞ 40629 / 32613 64919

℞ 8959 p̄ ℞ 43916 p̄ $\frac{16}{33}$ / 13789 143961

℞ ℞ 11642 p̄ ℞ 33815 / 18341 63964

℞ 16333 p̄ ℞ 4189 / 18916 40583

℞ Cuba $\frac{44}{143}$ ℞ prolata $\frac{15}{41}$ p̄ 8

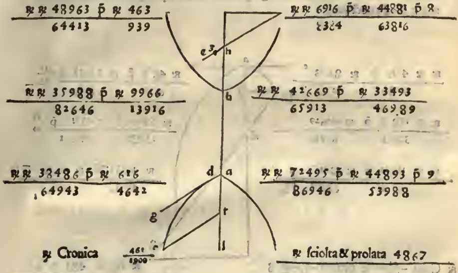
℞ ligata 483 p̄ 4

¶ Propoſitio, Vigeſimaoctaua.

SI linea tangat vnam oppoſitarum, relictumq; ſit quodam punctum intra alterā ſectionem, & per ipſum equidiſtans ducatur tangenti lineę producta in vtrāq; coincidet ſectioni.

¶ Sint contrapoſitæ quarum diameter.a.b.& ſectionem.a.tangat quædam linea.g.d.& relictum ſit quodam punctum intra alteram ſectionem quod ſit.e.& per.e.ducatur.e.z.equidiſtans.g.d.Dico q; e.z.producta in vtrāq; coincidet ſectioni, quoniam igitur demōſtratū eſt q;.g.d.pducta coīcidet diametro.a.b.& eſt.e.z.eqdiſtās ipſi, igitur & e.z.pducta coīcidet diametro,coincidat ad.h.& ponat.a.t.eq̄lis.b.h.& p.t.ducatur

t.c.equidiſtans.z.e.& ordinate ducať.c.l.& ponatur.h.m.equalis.l.t.& ordinate ducatur.m.n.& producať in rectum.h.n.& quoniā c.l.equidiſtās eſt.m.n.&.c.t h.n.& vna linea eſt.l.m. Similis eſt triangulus.c.t.l.triangulo.h.m.n.&.l.t.equalis eſt.h.m. Igitur.c.l.equalis eſt.m.n.quare & id quod fit ex.c.l.equale eſt eo quod fit ex.m.n.& quoniam.l.t.eſt equalis.h.m.&.a.t.b.h.cōis autem eſt.a.b.Igitur.b.l.equalis eſt.a.m. equale igitur eſt id quod eſt ſub.b.l.a.eo quod eſt ſub.a.m.b.vt igitur quod eſt ſub.b.l.a.ad id quod fit ex.c.l.ſic quod eſt ſub.a.m.b.ad id quod fit ex.m.n.& eſt vt quod eſt ſub.b.l.a.ad id quod fit ex.l.c.tranſuerſa ad rectam & vt igitur quod eſt ſub.a.m.b.ad id quod fit ex.m.n.tranſuerſa ad rectam.n.igitur ad ſectionē eſt. Igitur.c.z.producta coincidet ſectioni ad.n.ſimiliter demonſtrabitur ꝙ ad alias partes producta coincidet ſectioni.



Propoſitio, Vigeſimanona.

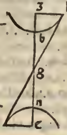
SI in contrapoſitis linea cadat per centrum ad vtramuis ſectionum producta ſecabit vtramq; ſectionem.

Sint contrapoſitę,quarum diameter.a.b.centrum autem.g.&.g.d.ſecet.a.d.ſectionem. Dico ꝙ & alteram ſectionem ſecabit,ordinate.n.ducatur.e.d.& ponatur.b.z.equalis.a.e.& ordinate ducatur.z.h.& quoniā.e.a.equalis eſt.b.z.cōis autē.a.b.eq̄le igiť quod eſt ſub.b.e.a.eo qđ eſt ſub.a.z.b.& qm̄ eſt vt qđ eſt ſub.b.e.a.ad id qđ fit ex.d.e.trāſuerſa ad rectā:Sed & vt id qđ eſt ſub.a.z.b.ad id qđ fit ex.z.h.trāſuerſa ad rectā,Igiť & qđ ē ſub.b.e.a.ad id qđ fit ex.d.e.ſic qđ eſt ſub.a.z.b.ad id qđ fit ex.z.h.eq̄le aūt eſt id qđ eſt ſub.b.e.a.eo qđ eſt ſub.a.z.b.eq̄le igitur eſt & quod fit

ex.e.d.quod ex.z.h.quoniam igitur.e.g.equalis eſt.g.z. &.d.e.z.h.& recta eſt.c.z.& e.d.equidiſtans.z.h.igitur &.d.h.recta eſt,&.g.d.ergo ſecabit vtráq; ſectionem.

℞℞ 45984 p̄ ℞ 8763 p̄ 4 / 67863 43913

℞ 30608 p̄ ℞ 4604 p̄ 15 / 88943 16612



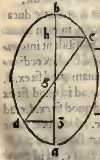
℞℞ 42934 p̄ ℞ 3688 p̄ 2 / 63936 48683

℞ 41696 p̄ ℞ 4606 p̄ 34 / 66516 15636

ℂPropoſitio, Trigeſima.

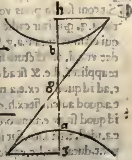
SI in defectione uel contrapoſitis linea ducatur in utráq; centri coincidens ſectioni per medium ſecabitur ad centrum.

ℂSit defectio uel contrapoſitæ, diameter autem ipſarum.a.b.cẽtrum.g. & per g.ducatur linea.d.g.e. Dico q.g.d.equalis eſt.g.e.ducatur.n. ordinate.d.z.&.e.h.& quoniam eſt vt id quod eſt ſub.b.z.a.ad id quod fit ex.z.d.tranſuerſa ad rectam, Sed & vt id quod ſub.a.c.b.ad id quod fit ex.h.e.tranſuerſa ad rectam, Igitur & quod eſt ſub.b.z.a.ad id quod fit ex.z.d.ſic qđ eſt ſub.a.h.b.ad id quod fit ex.h.e.& viciſſim vt qđ eſt ſub.b.z.a.ad id qđ eſt ſub.a.h.b.ſic qđ fit,ex.d.z.ad id qđ fit ex.h.e. Sed vt qđ fit ex.d.z.ad id qđ fit ex.h.e.ſic quod fit ex.z.g.ad id qđ fit ex.g.h. Viciſſim ergo vt quod eſt ſub.b.z.a.ad id quod fit ex.z.g.ſic quod eſt ſub.a h.b.ad id quod fit ex.g.h. Igitur & vt in defectione componenti & in contrapoſitis ex contrario & reuertenti vt quod fit ex.a.g.ad id quod fit ex.g.z.ſic quod fit ex.b.g.ad id quod fit ex.g.h.& viciſſim,equale autẽ eſt quod fit ex.g.b.eo quod fit ex.a.g.equale igitur & qđ fit ex.g.h.eo quod fit ex.z.g. Igitur.z.g.eſt equalis.g.h.& ſunt equidiſtantes.d.z.&.h.e. Igitur &.d.g.equalis eſt.g.e.



℞ 8683 p̄ ℞ 86612 p̄ 4 / 93661 95612

℞ 186496 p̄ ℞ 6683 p̄ 15 / 253608 167512

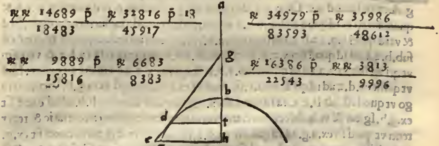


ℂPropoſitio, Trigeſimaprima.

SI hyperboles ad tranſuerſum latus ſpeciei relictũ ſit quodam punctũ non minore reci piens ad ſummitatem ſectionis dimidio tranſuerſi ſpeciei lateris & ab ipſo coincidat li-

nea ad ſectionem, producta intra cadet ſectionem ad ſecutas partes ſectionis.

Sit hyperbole cuius diameter.a.b.& relictum ſit in ipſa punctum.g.non minorē recipiens.g.b.Dimidio.a.b.& coincidat quædã linea ad ſectionem quæ ſit.g.d. Dico ꝙ g.d.producta intra ſectionē cadet, Si.n.poſſibile cadat extra ſectionē vt.g.d.e.& a cõtigēte pũcto.e.ordinate applicet̃.e.h.&.d.t.& ſit prius a.g equalis.g.b, & quoniã quod ex.e.b.fit ad id quod fit ex.d.t. maiorem habet rationem q̃ id quod fit ex.z.b. ad id quod fit ex.d.t.Sed vt quod fit ex.e.h.ad id quod fit ex.d.t. ſic quod fit ex.h.g. ad id quod fit ex.g.t.propterea ꝙ.e.h.equidiſtans eſt.d.t. vt autem quod fit ex.z.h. ad id quod fit ex.d.t. ſic quod eſt ſub.a.h.b.ad id quod eſt ſub.a.t.b. per ſectionem, qḋ igitur fit ex.h.g.ad id qḋ fit ex.g.t.maiorē habet rationē q̃ id quod eſt ſub.a.h.b. ad id qḋ eſt ſub.a.t.b. viciſſimqꝫ qḋ fit ex.g.h.ad id qḋ fit ex.a.h.b.maiorē habet rõnē q̃ id quod fit ex.g.t.ad id qḋ eſt ſub.a.t.b. igitur id quod fit ex.g.d.ad id qḋ eſt ſub.a.h.b. maiorē rationem habet q̃ quod fit ex.g.b.ad id quod eſt ſub.a.t.b. quod eſt impoſſibile nõ.g.d.e.extra ſectionem cadet, Intra igitur, & propter hec quæ ab aliquo puncto eorum quæ in.a.g.ſunt, multomagis intra cadet, quoniam &.g.d.intra cadit.

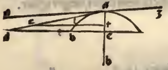


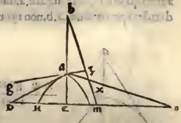
Propoſitio, Trigeſimaſecunda.

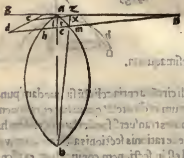
SI Coni ſectionis per ſumitatem linea ordinate applicata ducatur tanget ſectionem, & in eum locum, qui eſt inter coni ſectionem & lineam, alia linea non intercidit.

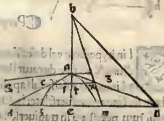
Sit coni ſectio prius vocata Parabole, cuius diameter.a.b. & ab.a. ordinate ducatur.a.g. ꝙ igitur cadit extra ſectionem demonſtratum eſt. Dico ꝙ in eum locum qui eſt inter lineam.a.g.& ſectionem alia linea non intercidit, ſi.n.poſſibile ſit intercidat vt.a.d. & relictum ſit quodam punctum contingens in ipſa quod ſit.d. & ordinate applicet̃.d.e.& ſit ad quam poſſunt ductæ ordinate.a.z. & quoniam quod fit ex.d.e.ad id quod fit ex.e.a.maiorē habet rationem q̃ id quod fit ex.b.e.ad id quod fit ex e.a.quod autem fit ex.b.e.equale eſt quod eſt ſub.z.a.e. igitur & id quod fit ex.d.e.ad id quod fit ex.e.a.maiorem habet rationem q̃ id quod eſt ſub.z.a.e. ad id quod fit ex e.a.ideſt.z.a.ad.a.e.fiat igit̃ vt quod fit ex.d.e.ad id quod fit ex.e.a.ſic.z.a.ad.a.t. & per.t.ducatur.t.l.c.equidiſtans.e.d. quoniam igitur vt id quod fit ex.d.e.ad id quod fit ex.e.a. z.a.ad.a.t.ideſt quod eſt ſub.z.a.t.ad id qḋ eſt ex.a.t.& eſt vt quod fit ex d.e.ad id quod fit ex.e.a.ſic quod fit ex.c.t.ad id quod fit ex.t.a. quod autem eſt ſub.z.a.t.equale eſt quod fit ex.c.t.l.quod eſt abſurdum; non igitur in eum locum qui eſt inter

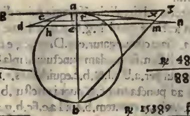
lineam.a.g.& ſectionē alia linea intercidit. Sit vtiq; ſectio hyperbole vel defectio vel circuli circumferentia cuius diameter.a.b. recta autem .a.z. & coniuncta.b.z. producatur & ab.a. ordinate ducatur.a g.q; igitur extra cadit ſectionem demonſtratum eſt. Dico q; & in eum locum qui eſt inter lineam.a.g.& ſectionem alia linea non intercidit, Si .n. poſſibile intercidat vt.a.d. & relictum ſit quodam punctum cõtingens in ipſa: quod ſit.d.& ordinate ab ipſo ducatur.d.e.& per.e.ducatur.e.m. equidiſtans.a.z.& quoniam quod fit ex.h.e.equale eſt quod eſt ſub.a.e.m. fiat id quod eſt ſub.a e.r. equale eo quod fit ex.d.e.& cõiuncta.a.n.ſecet.z.m.ad.x.& per.x.ducatur .x.r.equidiſtās z.a.&,per.r.ducatur.r.l.c.equidiſtans.a.g.quoniam igitur quod fit ex .d.e. equale eſt eo quod eſt ſub.a.e.n eſt vt.n.e.ad.e.d. D.e ad.e.a.Igitur & vt.n.e.ad.e.a.quod fit ex.c.r. ad id quod fit ex.r.a.vt igitur.z.r.ad.r.a. quod fit ex.c.r. ad id quod fit ex.r.a. Igitur media ꝓportionalis eſt.c.r.z.r.a.quod igitur ex.c.r.fit equale eſt eo quod eſt ſub a.r.z.eſt autem & id quod fit ex.l.r. ad id quod eſt ſub.a.r.z.equale per ſectionē. quod igitur fit ex.c.r.equale eſt eo quod fit ex.r.l.quod eſt abſurdum: Non igitur in eum locum qui eſt inter lineam.a.g.& ſectionem alia linea intercidit.











℞ ℞ 9448 p̄ ℞ ℞ 13641 ℞ 4833 p̄ ℞ 3339 p̄ 35

14686 18581 8893 7786

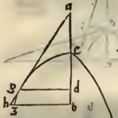
℞ ℞ 8888 p̄ ℞ 14612 ℞ 15389 p̄ ℞ 8993 p̄ 41

9192 17446 27339 14317

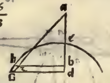
¶Propoſitio, Trigeſimatertia.

SI Parabole relictum ſit quodam punctum, & ab ipſo ordinate ad diametrum applicetur, & receptę ſub ipſa a diametro ad ſumitarē ponatur eq̄lis i linea a ſumitate ipſius, quę a facto puncto ad relictum punctū coniūgitur, tanget ſectionem.

¶Sit Parabole cuius diameter.a.b. & ducatur ordinate.g.d.& ponatur.a.e.equalis.e.d. & ducatur.a.g. Dico q̄.a.g.producta extra ſectionem cadet, Si.n.poſſibile ſit cadat intus vt.g.z.& ordinate ducatur.h.b.& quoniam quod fit ex.b.h.ad id quod fit ex.g.d. maiorē habet rationē quam id quod fit ex.z.b. ad id quod fit ex.g.d. Sed vt id quod fit ex.z.b.ad id quod fit ex.g.d.eſt id quod fit ex.b.a.ad id quod fit ex.a.d. vt aūt id quod fit ex.h.b.ad id qđ fit ex.g.d.eſt.b.e.ad.d.e.Igitur.b.e.ad.e.d.maiorē habet rationem quam id quod fit ex.b.a.ad id quod fit ex.a.d. Sed vt.b.e.ad.e.d.eſt id quod eſt quater ſub.b.e.ad id quod eſt quater ſub.a.e.d.& quater igitur quod eſt ſub.b.e.a. ad id quod eſt quater ſub.a.e.d.maiorem habet rationem quam id quod fit ex.b.a.ad id quod fit ex.a.d.viciſſimq; igitur id quod eſt quater ſub.b.e.a.ad.a.b.maiorē habet rationē quam id quod eſt quater ſub.a.e.d. ad id quod fit ex.a.d.quod eſt impoſſibile exiſtēte.n.a.e.equali.e.d.id quod eſt quater ſub.a.e.d.eſt equale eo quod fit ex.a.d.id autem quod eſt quater ſub.b.e.a.minus eſt eo quod fit ex.b.a.Igitur punctum.e.non eſt diuidens per medium.a.b.non igitur.a.g. intra ſectionem cadet, tanget igitur.



℞ ℞ 8999 ℔ ℞ ligata 13616
15896 14383



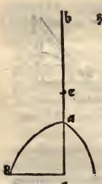
¶Propoſitio, Trigeſimaquarta.

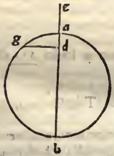
SI in hyperbole vel deſectionem vel circuli circūferentia relictū ſit quodam punctum, & ab ipſo ducatur linea ad diametrum ordinate: & quam habet rationem ad inuicem abſciſę ſub applicata ad terminos tranſuerſi ſpeciei lateris, eadem habent ſectiones tranſuerſi lateris, quare eiuſdem eſſe rationis ſectionis ad ſumitatem. vel relictum punctum in tranſuerſo latere & quod eſt in ſectionem coniunctum exiſtens linea, tanget ſectionem.

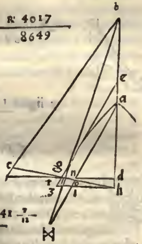
¶Sit hyperbole vel defectio vel circuli circūferentia, cuius diameter.a.b.& relictum ſit quodam punctum in ſectione quod ſit.g.&.a.g.ordinate ducatur.g.d.& fiat.b.d. ad.d.a.ſic.b.e.ad.e.a.etiam coniungatur.e.g.Dico q̄.g.e.tanget ſectionē.Si.n.poſſibile ſecet ut.e.g.z.& relictum ſit quodam punctum in ipſa quod ſit.z.& ordinate applicetur.h.z.t.& ducantur per.a.b.a.l.&.b.c.equidiſtans.e.g.& coniunctæ.d.g.&.b.g.&.h.g.producantur ad puncta.m.x.c.& quoniam eſt ut.b.d.ad.d.a.ſic.b.e.ad.e.a. Sed.b.d.ad.d.a.ſic.b.c.ad.a.m.vt autem.b.e.ad.a.e.ſic.b.g.ad.g.x.id eſt.b.c.ad.x.n. vt igitur.b.c.ad.a.n.eſt.b.c.ad.n.x.Igitur.a.n.equalis eſt.n.x.quod igit eſt ſub.a.n.

x,maius eſt eo quod fit ex.a.o.x Igitur.n.x.ad.x.e.maiorem habet rationem quam.o a.ad.a.n.Sd vt.n.x.ad.x.o.eſt.c.o.b.ad.b.m. Igitur.c.b.ad.b.m.maiorem habet rationem quam.o.a.ad.a.n.quod igitur eſt ſub. c.b.a.n.maius eſt eo quod eſt ſub.m.b.a.o. quare quod eſt ſub.c.b.a.n.ad id quod fit ex.g.e.maiorē habet rationē quam id quod eſt ſub.m.b.a.o.ad id quod fit ex.g.e.Sed vt id quod eſt ſub.c.b.a.n.ad id quod fit ex. g.e.ſic quod eſt ſub.b.d.a.ad id quod fit ex.d.e.propter ſimilitudinem .b.c.d.&.e.g. d.&.n.ad triangulorū vt autem id quod eſt ſub.m.b.a.o.ad id quod fit ex.g.e. Sic eſt quod eſt ſub.b.h.a.ad id quod fit ex.h.e. quod igitur eſt ſub.b.d.a.ad id quod fit ex.d.e.maiorem rationem habet quam id quod eſt ſub.b.h.a.ad id quod fit ex.h.e.viciſſim id igitur quod eſt ſub.b.d.a.ad.a.h.b.maiorem habet rationem quam id quod fit ex.d.e.ad id quod fit ex.e.h Sed vt id quod eſt ſub.b.d.a ad id quod eſt ſub.b.h.a. ſic quod fit ex.g.d.ad id quod fit ex.e.t.vt autem quod fit ex.d.e.ad id quod fit ex.e. h.ſic quod fit ex.g.d.ad id quod fit ex.z.h.Igitur & id quod fit ex.g.d.ad id quod fit ex.t.h.maiorem habet rationem quam id quod fit ex.g.d.ad id quod fit ex.z.h.igitur t.h.eſt minor.z.h.quod eſt impoſſibile, non igitur.e.g.ſecat ſectionem, tangit igitur.

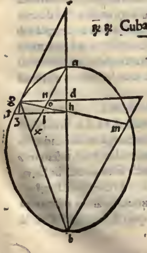
R R Cronica & ſciolta 15512 p R 4017 / 18892 8649

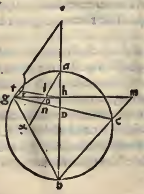


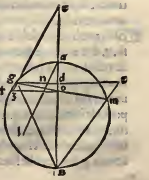




R R Cuba 4916 p R prolata 32441 7/11



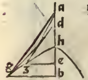




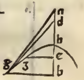
¶Propoſitio, Trigeſimaquinta.

SI Parabolem linea tangat coincidens diametro extra ſectionem, ducta a tactu linea ordinate ad diametrum, equalem recipiet a diametro ad ſumitatem ſectionis ei inter ipſam & tangentem & inter locum tangẽtis & ſectionem nulla linea intercidit.

¶Sit parabole cuius diameter.a.b.& ordinate ducatur.a.b.& ſit.a.g.tangens ſectionẽ. Dico ꝙ.a.h.equalis eſt.h.b.Si.n.poſſibile ſit inequalis ipſi &.h.e.ponatur equalis.a.h.& ordinate ducatur.e.z.& coniungatur.a.z.Igitur.a.z.producta coincidet.a.g.lineę; quod eſt impoſſibile, erunt.n.duarum linearum iidem termini igitur.a h.non eſt inequalis.h.b.equalis ergo: Dico vtiq; ꝙ in locum qui inter lineam.a.g.& ſectionẽ nulla linea intercidit, Si.n.poſſibile intercidat.g.d.& ponatur.h.e.equalis.h.d.& ordinate ducatur.e.z.Igitur linea.a.d.ad.z.coniuncta tanget ſectionem, producta igitur extra ipſam cadet, quare coincidet.d.g.& duarum linearum erunt iidem termini quod eſt abſurdum non igitur in eum locum qui eſt inter ſectionem & lineam.a.g.intercidit linea.



℞ ℞ 13689 p̄ ℞ 9863 m̄ ℞ 813 p̄ 24/26
22686 – 13493 2056

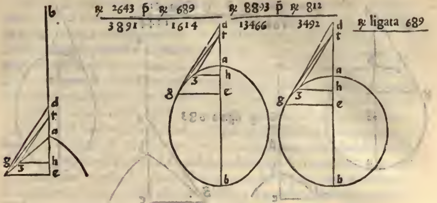


℞ ligata 1562 con ℞ ſciolta 512 m̄ ℞ 2616

¶Propoſitio, Trigeſimaſexta.

SI hyperbolem vel defectionem, vel circuli circũferentiam tangat quædam linea coincidens tranſuerſo ſpeciei lateri, & a tactu ducatur linea ordinate ad diametrum erit vt recepta ſub tangente ad extremum tranſuerſi lateris ad receptã ſub tangente ad alterum extremum lateris ſic recepta ſub applicata ad extremum ad receptam ſub applicata ad alterum extremum lateris, quare eiuſdem rationis continuas eſſe, & in eum locum, qui eſt inter locum tangentis & coni ſectionem alia linea non intercidit.

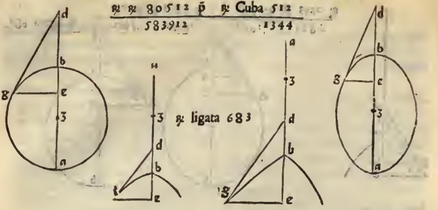
¶Sit hyperbole vel defectio vel circuli circũferentia, cuius diameter.a.b.tãgens autem ſit.g.d.& ordinate ducatur.g.e.Dico ꝙ eſt vt.b.e.ad.e.a.ſic.b.d.ad.d.a. Si.n.nõ eſt ſit vt.b.d.ad.d.a.b.h.ad.h.a.& ordinate ducatur.h.z.coniuncta igitur ab.d.ad.z.linea tanget ſectionem, producta igitur coincidet.g.d.duarum.n.linearum iidem termini, quod eſt abſurdum, Dico ꝙ inter ſectionem & lineã nulla linea intercidit, Si.n.poſſibile intercidat vt.g.t.& fiat vt.b.t.ad.t.a.b.h.ad.h.a.& ordinate ducať.h.z.Igitur.a.t.ad.z.coniuncta linea producta coincidet.t.g.duarum.n.linearum iidem termini erunt quod eſt impoſsibile. Non igitur in eum locum qui eſt inter ſectionem & lineam.g.d.intercidit linea.



¶Propoſitio, Trigeſimaſeptima.

SI hyperbolem vel defectionem vel circuli circūferentiam linea attigens coincidit diametro, & a tactu ad diametrum ducatur linea ordinate, recepta linea ſub applicata vltra ad centrum ſectionis cum recepta ſub tangente ad centrum ſectionis equale continebit eo quod fit ex cētro ſectionis, cum ea autem quæ eſt inter applicatam & tangentem cōtinebit ſuperficiem habentem rationem ad id, quod fit ex applicata, tetragonum, quam tranſuerſum latus ad rectum.

¶Sit hyperbole vel defectio vel circuli circūferentia, cuius diameter. a.b. & tangens ducatur. g.d. & applicetur. g.e. cētrum autem ſit. z. Dico ꝙ equale eſt id quod eſt ſub. d. z. e. eo quod fit ex. z. b. & ſit id quod eſt ſub. d. e. z. ad id quod fit ex. e g. tranſuerſum ad rectum, quoniam. n. g. d. tangit ſectionem & ordinate applicata eſt. g. e. erit vt. a. d. ad. d. b. a. e. ad. e. b. componenti igitur eſt vt. Vtraqꝫ. a. d. &. d. b. ad. d. b. vtraqꝫ. a. e. & e. b. ad. e. b. & preeuntium dimidia, in hyperbole quidem dicimus, Sed vtriuſqꝫ quidem a. e. &. e. b. mediatas eſt. z. e. &. z. b. mediatas. a. b. vt igitur. z. e. ad e. b. eſt. z. b. ad. b. d. conuertenti igitur eſt vt. e. z. ad. z. b. eſt. z. b. ad. z. d. equale igitur eſt quod eſt ſub. e. z. d. eo quod fit ex. z. b. & quoniam eſt vt. z. e. ad. e. b. eſt. z. b. ad. b. d. ideſt. a. z. ad d. b. viciſſim vt. a. z. ad. z. e. eſt. d. b. ad. b. e. componenti, vt. a. e ad. e. z. eſt. d. e. ad. e. b. quare quod eſt ſub. a. e. b. equale eſt eo quod eſt ſub. z. e. d. eſt autem vt id quod eſt ſub a. e. b. ad id quod fit ex. g. e. trāſuerſa ad rectam, quoniam autem defectionis vel circuli, Sed vtriuſqꝫ. a. d. &. d. b. dimidia eſt. z. d. &. a. b. dimidia eſt. z. b. vt igitur. z. d. ad d. b. eſt. z. b. ad. b. e. conuertenti igitur vt. d. z. ad. z. b eſt. z. b. ad. z. e. equale igitur eſt quod eſt ſub. d. z. e. eo quod fit ex. b. z. Sed quod eſt ſub. d. z. e. eq̄le eſt eo quod eſt ſub e. d. z. & eo quod fit ex. z. e. quod autem fit ex. b. z. equale eſt eo quod eſt ſub. a. e. b. cum eo quod fit ex. z. e. Cōmune auferatur id quod fit ex. z. e. reliquum igitur quod eſt ſub d. e. z. ad id quod fit ex. g. e. ſic quod eſt ſub. a. e. b. ad id quod fit ex. g. e. Sed vt id quod eſt ſub. a. e. b. ad id quod fit ex. g. e. eſt tranſuerſa ad rectam vt igitur quod eſt ſub. d. e. z. ad id quod fit ex. g. e. eſt transuerſa ad rectam.



℄Propoſitio, Trigeſimaoctaua.

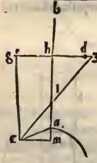
SI hyperbolem vel defectionem vel circuli circũferentiam linea tangens coincidat ſecundę diametro, & a contactu linea applicetur ad eandem diametrũ equidiſtans alteri diametro, recepta linea ſub applicata vltra centrum ſectionis, cum recepta ſub tangente vltra centrum ſectionis equale continebit quadrangulo quod fit ex dimidia ſecundę diametri, cum ea autem quæ eſt inter applicatam & tangentem cõtinebit ſuperficiem rationem habentem ad id quod fit ex applicata, quam habet rectũ ſpeciei latus ad tranſuerſum.

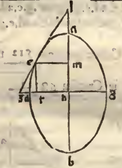
℄Sit hyperbole vel defectio vel circuli circumferentia, cuius diameter.a.b.h. ſecunda autem Diameter.g.h.d. tangens autem ſectionem ſit.l.z. coincidẽs.g.d.ad.z.& ſit t.e.equidiſtans.a.b. Dico ꝙ id quod eſt ſub.z.h.t.equale eſt eo quod fit ex.h.t.& eſt vt id quod eſt ſub.h.t.z.ad id quod fit ex.t.e. recta.ad tranſuerſam: ducatur ordinate.e.m.eſt igitur vt id quod eſt ſub.h.m.l.ad id quod fit ex.m.e.tranſuerſa ad rectam, Sed eſt vt tranſuerſa.b.a.ad.g.d.g.d.ad rectam, igitur vt tranſuerſa ad rectam, quod fit ex a.b.ad id quod fit ex.g.d.& q̃rta.ideſt quod fit ex.h.a.ad id quod fit ex.h.g. & vt igitur quod eſt ſub.h.m.l.ad id quod fit ex.m.e.quod fit ex.h.a.ad id qđ fit ex.h.g.quod autem eſt ſub.h.m.l.ad id quod fit ex.m.e.cõpoſitam habet ratiõe ex ea quam habet h.m.ad.m.e.ideſt ad.h.t.& ex ea quã habet.l.m.ad.m.e.ex contrario igitur ratio eius quod fit ex.g.h.ad id quod fit ex.h.a.coniungitur ex ea quam habet.e.m.ad.m.h.ideſt.t.h.ad.h.m.& ex ea quam habet.e.m.ad.m.l.ideſt.z.h.ad.h.l.quod igitur fit ex.h.g.ad id quod fit ex.h.a.compoſitam habet rationem ex ea quam habet.t.h.ad.h.m.& ex ea quam habet.z.h.ad.h.l.quæ eadem eſt ei quam habet id quod eſt ſub.z..h.t.ad id quod eſt ſub.m.h.l. vt igiť quod eſt ſub.z.h.t.ad id quod eſt ſub.m.h.l. eſt id quod fit ex.g.h.ad id quod fit ex.h.a.& viciſſim igiť eſt vt id quod eſt ſub.z.h.t.ad id quod fit ex.g.h.quod eſt ſub.m.h.l.ad id quod fit ex.h.a.equale igitur eſt quod eſt ſub.m.h.l,eo quod fit ex.h.a.equale igitur & quod eſt ſub.z.h.t.eo quod fit ex.h.g.rurſus quoniam eſt vt recta ad tranſuerſam quod fit ex.e.m.ad id quod eſt ſub.h.m.l.& quod fit

ex.e.

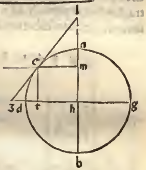
ex.e.m. ad id quod eſt ſub .h.m.l.cōpoſitā habet ratione͂ ex ea quā habet.e.m.ad.h.m ideſt.t.h.ad.t.e.& ex ea quā habet.e.m.ad.m.l.ideſt.z.h.ad.h.l ideſt.z.t.ad.t.e. Vt igitur quod eſt ſub.z.t.h.ad id quod fit ex.t.e.eſt recta ad trāſuerſam: Iiſdē ſubiectis demonſtrandum eſt quod eſt vt ea quæ eſt inter tangentem & extremum ſecundæ Diametri ad eadem applicatæ ad eam quæ eſt inter tangentem & alterum extremum ſecūdæ diametri, ea quæ eſt inter alterum extremum & applicatam ad eam quæ eſt inter alterum extremum & applicatam: quoniam equale eſt id quod eſt ſub.z.h.t.eo quod fit ex.h.g.ideſt eo quod eſt ſub.g.h.d.nam.g.h.eſt equalis.h.d. eſt igitur vt.z.h.ad.h.d.g.h.ad.h.t.& conuertenti vt.h.z.ad.z.d.h.g.ad.g.t.& dupla preſentium eſt autem dupla h.z. vtraq; g.z.&.z.d.propterea quod.g h.&.h.d.ſunt equales, Sed.d.g.dupla eſt.h.g. vt igitur vtraq;.g.z.&.z.d.ad.z.d.d.g.ad.g.t.& vt.g.z.ad.z.d.d.z.ad t.g. quod oportebat oſtendere, manifeſtum igitur ex dictis q; .e.z. tanget ſectionem, Si autem ſit equale quod eſt ſub.z.h.t. eo quod fit ex .h.g. & ſi rationem habeant quod eſt ſub.h.t.z.ad id quod fit ex.t.e.dictum demonſtrabitur.n.contrariæ.

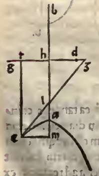
℞ Cronica 589 p̃ 4

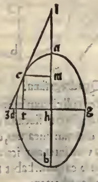




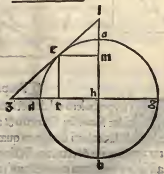
℞ Cubica quadrata 64







℞ ſciolta 324 p̃ 6

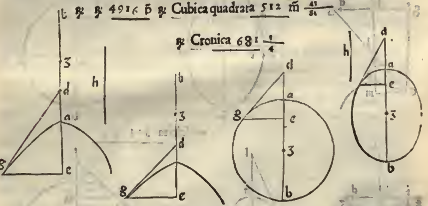


d

Propoſitio, Trigeſimanona.

SI hyperbolem vel defectionem vel circuli circumferentiam linea tangens coincidat diametro & a tactu applicetur linea ad diametrum ordinate quæ duarum linearum, quarum hæc quidem eſt inter applicatam & centrum ſectionis illa inter applicatam & tangentem, habebit ad ipſam applicata compoſitam rationem ex ea quam latera duarum linearum ad applicatam & ex ea quam habet rectum ſpeciei latus ad tranſuerſum.

Sit hyperbole vel defectio vel circuli circumferentia cuius diameter .a.b. centrum autem ipſius z.& ducatur tangens ſectionem.g.d.& ordinate applicetur.g.e. Dico g.g. e.ad alteram.z.e.&.e.d. compoſitam habet rationem,& ex ea quam habet rationem,& ex ea quam habet rectum ad tranſuerſum, & ex ea quam habet altera.z.e.&.e.d. ad.e. g. Sit.n. equale quod eſt ſub .z.e.d. eo quod eſt ſub.e.g.h. & quoniam eſt vt quod eſt ſub.z.e.d. ad id quod fit ex.g.e. eſt tranſuerſa ad rectam, equale autem eſt quod eſt ſub z.e.d. eo quod eſt ſub.e.g.h. vt igitur quod eſt ſub.g.e.h. ad id quod fit ex.g.e. id eſt.h. ad.e.g. tranſuerſa ad rectam,& quoniam equale eſt quod eſt ſub.z.e.d. eo quod eſt ſub g.e.h. eſt vt.e.z.ad.e.g.h.ad.e.d.& quoniam.g.e.ad.e.d. compoſitam habet rationem ex ea quam habet.g.e.ad.h.& ex ea quam habet.h.ad.e.d. Sed eſt vt.g.e.ad.h. recta ad tranſuerſam, vt autem.h. ad.e.d.z.e. ad.e.g. Igitur.g.e.ad.e.d. compoſitam habet rationem ex ea quam habet recta ad tranſuerſam &.z.e.ad.e.g.

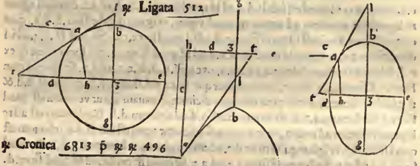


Propoſitio, Quadrageſima.

SI hyperbolem vel defectionem vel circuli circumferentiam linea tangens coincidat ſecundæ diametro & a tactu applicetur linea ad eandem diametrum equidiſtans alteri diametro quæ duarum linearum, quarum eſt hęc quidem inter applicatam & centrum ſectionis, Illa vero inter applicatam & tangentem, habebit ad ipſam applicata compoſitam rationem ex ea quam habet tranſuerſa ad rectam & ex ea quam habet altera duarum linearum ad applicatam.

Sit hyperbole vel defectio vel circuli circumferentia.a.b. Diameter autem ipſius.b.z.g.ſecunda autem.d.z.e.& tangens ducatur.t.l.a.&.a.h.equidiſtans.b.g. Dico q.a.h.ad alteram.t.h.&.z.h.compoſitam habet rationem ex ea quam habet tranſuerſa ad rectam & altera.t.h.&.z.h.ad.h.a.fit quod eſt ſub.t.h.z.equale eo quod eſt ſub.h.a.c.& quoniã eſt vt recta ad tranſuerſam, quod eſt ſub.t.h.z.ad id quod fit ex.h.a.& id quod eſt ſub.h.a.c.equale eo quod eſt ſub.t.h.z. igitur & quod eſt ſub.h.a.c.ad id quod fit ex.h.a.ideſt.c.ad.a.h.eſt vt recta ad tranſuerſam,& quoniam.a.h.ad.h.z.compoſitam habet rationem ex ea quam habet.a.h.ad.c.& ex ea quam habet.c.ad.h.z. Sed vt.h.a ad.c.tranſuerſa ad rectam,vt autem.c.ad.h.z.t.h.ad.h.a.propter q quod eſt ſub.t.h.z.equale eſt eo quod eſt ſub.a.h.c. igitur.a.h.ad.h.z.compoſitam habet ratione ex ea quam habet tranſuerſa ad rectam,& ex ea quam habet.t.ad.h.a.

Ligata 512



Cronica 6813 p̄ 496

¶Propoſitio,Quadrageſimaprima.

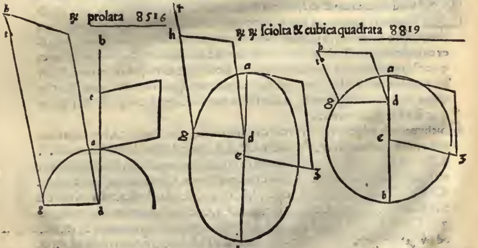
SI hyperbolem vel defectione vel circuli circumferentia linea applicetur ordinate ad diametrum & ab applicata & ex ea quæ a centro deſcribantur paral-lelograma equiangula habeât autem applicatum latus ad reliquum ſpeciei latus compoſitam rationem, ex ea quam habet ea quæ a centro ad reliquum ſpeciei latus & ex ea quam habet rectum ſpeciei ſectionis latus ad tranſuerſum. Species quæ fit ex ea quæ eſt inter centrum & applicatam ſimilis ei ſpeciei quæ ab ea quæ ex centro in hyperbole quidem maior eſt ea ſpecie quæ fit ex applicata ei ſpeciei quæ ex centro, In defectione & circuli circumferentia, cum ea ſpecie quæ fit ex applicata equalis eſt ei ſpeciei quæ fit ex ea quæ ex centro.

¶Sit hyperbole vel defectio vel circuli circumferentia,cuius diameter.a.b.centrum autem.e.& ordinate applicet.g.d.& ab.e.a.&.g.d.eqangule ſpẽs deſcribãtur.a.z.&.d.h.&.g.d.ad.g.h.cõpoſitã habeat rationẽ ex ea quã habet.a.e.ad.e.z.& ex ea quã habet recta ad trãſuerſam.Dico q in hypbole ſpẽs quę fit ex.e.d.ſimilis.a.z.eq̃lis eſt.a.z.&.h.d.ĩ defectiõe aũt & circulo,qđ fit ex.e.d.ſimile.a.z.cũ.h.d.eq̃le eſt.a.z.fiat.n.vt recta ad trãſuerſam.d.g.ad.g.t.& qm̃ eſt vt.g.d.ad.g.t.recta ad trãſuerſam,Sed vt.d.g.ad g.t.qđ fit ex.d.g.ad id quod eſt ſub.d.g.t. vt aũt recta ad trãſuerſam quod fit ex.g.d.ad id quod eſt ſub.b.d.a.equale ergo eſt quod eſt ſub.b.d.a.eo quod eſt ſub.d.g.t.& quoniam.d.g.ad.g.h.cõpoſitam habet rationẽ ex ea quam habet.a.e.ad.e.z.& ea quã

habet recta ad tranſuerſam idem.d.g.ad.c.t.rurſuſq;.d.g.ad.g.h.compoſitam habet rationem ex ea quam habet.d.g.ad.g.t.& ex ea quam habet.t.g.ad.g.h.Igitur compoſita ratio ex ea quam habet.a.e.ad.e.z. & ex ea quam habet.g.d.ad.g.t.eadem eſt compoſitæ rationi ex ea quam habet.d g.ad.g.t.& ex ea quam habet.t.g.ad.g.h.communis auferatur ratio quam habet.g.d.ad.g.t.reliqua igitur ratio.a.e.ad.e.z.reliquæ rationi.t.g.ad.g.h.eſt eadem,Sed vt.t.g.ad.g.h.quod eſt ſub.t.g.d.ad id qđ eſt ſub h.g.d.vt autem.a.e.ad.e.z.quod fit ex.a.e.ad id quod eſt ſub.a.e.z.quod autē eſt ſub t.g.d.equale demonſtratum eſt eſſe eo quod eſt ſub.b.d.a.Igitur vt quod eſt ſub.b.d.a.ad id quod eſt ſub.h.g.d.ſic quod fit ex.a.e.ad id quod eſt ſub.a.e.z. Viciſſim vt quod eſt ſub.b.d.a.ad id quod fit ex.a.e. quod eſt ſub.d.g.ad id quod eſt ſub.a.e.z.vt autem id quod eſt ſub.g.d.ad id quod eſt ſub.a.e.z. parallelogrammum.d.h.ad.z.a.equiangula.n.ſunt,& rationem habēt compoſitam ex lateribus .h.g.ad.a.e.&.g.d.ad e.z.igitur & vt id quod eſt ſub.b.d.a.ad id quod fit ex.e.a.h.d.ad.e.z.dicēduũ igitur in hyperbole vt omnia ad omnia vnum ad vnum,vt igitur quod eſt ſub.b.d.a.cum eo quod fit ex.a.e.id eſt id quod fit ex.e.d.ad id quod fit ex.e.a.Sic.h.d.& .a.z.ad id quod fit ex.a.z.vt autem id quod fit ex.e.d.ad id quod fit ex.e.a.Sic ſpecies quæ fit ex e.d.ſimilis & ſimiliter deſcripta.a.z.ad.a.z.vt igiť.h.d.&.a.z.ad.a.z.ſic ſpecies quæ fit ex.e.d.ſimilis.a.z.ad.a.z.ſpecies igitur que fit ex.e.d.ſimilis.a.z.equalis eſt.h.d.&a.z.in defectione & circuli circumferentia dicimus.quoniam igitur vt totum eſt quod fit ex.a.e.ad totum.a.z.ſic ablatum.a.b.ad.b.d.ad ablatum.d.h.&reliquum eſt ad reliquum vt totum ad totum,ab.e.a.autem ſi auferatur quod eſt ſub.b.d.a.reliquum eſt quod fit ex.d.e.vt igitur quod fit ex.d.e.ad eminentiam qua ſuperat.a.z.d.h.ſic quod fit ex.e.a.ad.a.z.Sed vt quod fit ex.a.e.ad.a.z.ſic quod fit ex.d.e.ad id quod fit ex.d.e.ſpeciem ſimilem.a.z. Igitur ſpecies quæ fit ex.d.e.ſimilis.a.z.equalis eſt eminentiæ qua.a.z.ſuperat.d.h.ſpecies igitur que fit ex.d.e.ſimilis.a.z.cum.d.h.equalis eſt.a.z.

℞ prolata 8516

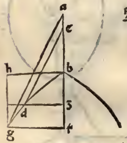
℞ ℞ ſciolta & cubica quadrata 8819



Propoſitio, Quadrageſima ſecunda.

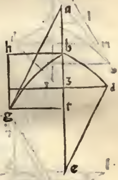
SI Parabolem linea tãgens coincidat diametro & a tactu linea applicetur ad diametrum ordinate relicto quodam puncto in ſectione, ducantur ad diametrum duo lineę & altera quidem ipſarum ad tangentem, altera ad applicatam a ceſ tactu factus ſub ipſis triangulus equalis eſt contento parallelogrammo ſub applicata a tactu & recepta ſub equidiſtanti vltra ſumitatem ſectionis.

Sit Parabole cuius dimeter.a.b.& ducatur tangens ſectionem.a.g.& ordinate applicetur.g.t. & a quodam puncto contigente ordinate applicetur.d.z.& per.d. ducatur d.e.equidiſtans.a.g.& per.g.g.h.equidiſtãs.b.z. & per.b.b.h.equidiſtans.t.g.Dico q̧.d.e.z.triangulus equalis eſt parallelogrammo.e.z.quoniam.n.a.g. tangit ſectionẽ, & ordinate applicata eſt.g.t.a.b.eſt equalis,b.t.dupla igitur.eſt.a.t.t.b.Igitur.a.t.g. triangulus eſt equalis parallelogrammo.b.g. & quoniam eſt vt quod fit ex.g.t.ad id quod fit ex.d.z.t.b.ad.b.z. per ſectionem, ſcilicet vt quod fit ex .g.t.ad id quod fit ex.d.z.triangulus.a.g.t.ad triangulum.e.d.z.vt autem.t.b.ad.b.z.parallelogrãmum h.t.ad parallelogrammum.h.z.eſt igitur vt triangulus.a.g.t.ad triangulum.e.d.z. parallelogrammum.h.t.ad parallelogrammum.z.h. Viciſſim igitur eſt vt.a.t.g.triangulus ad parallelogrammum .b.g. triangulus.e.z.d. ad parallelogrammum .b.z.equalis autem eſt triangulus .a.g.t. parallelogrammo .h.t. equalis igitur eſt triangulus.e.d.z parallelogrammo.h.z.



℞ ℞ 2563 p̃ ℞ ℞ prolata 512
6699 4513

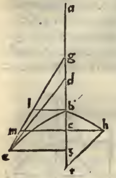
℞ Cubica quadrata 5616



Propoſitio, Quadrageſima tertia.

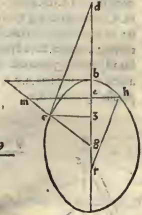
SI hypebolem vel defectionem vel circuli circumferentiam linea tangens coincidat diametro,& a tactu applicetur linea ordinate ad diametrum & hęc per ſumitatem equidiſtans ducatur coincidens lineę per tactum & centrum ductæ. relicto autem quodam puncto in ſectione ducantur duo lineę ad diametrum,quarum hęc quidem ad tangentem,Illa vero ad ductam a tactu,factus ſub ipſis triangulus in hyperbole,cuius abſcidit triangulum vel per centrum & tactum minor erit ei qui fit ex ea quæ ex centro ſimili abſciſo in defectiõe autem & circuli circumferentia cum abſciſo vltra cẽtrũ triãguli eq̃lis erit ei qui fit ex ea quæ ex centro triãgulo ſimili abſciſo.

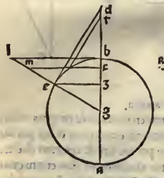
Sit hyperbole vel defectio vel circuli circumferentia cuius diameter.a.b. centrum autem.g.& ducatur tangens ſectionem.d.e.& coniungatur.g.e. & ordinate applicetur e.z.& relictum ſit quodam punctum in ſectione quod ſit.h.& tangenti equidiſtans ducatur.h.t.& ordinate applicetur.h.c.m,& per.b.ordinate applicetur.b.l.Dico q̄ c.m.g.triangulus differt a triangulo.g.l.b.per triangulum.h.c.t.quando.n.e.d.tangit, applicata autem eſt.e.z.e.z.ad.z.d.compoſitam habet ratione͂ ex ea quam habet.g.z.ad z.e.& recta ad tranſuerſam, Sed ut.e.z.ad.z.d.e.h.c.ad.c.t.compoſitam rationem ex ratione.b.g.ad.b.l.& rectę ad tranſuerſam, Sed vt.e.z.ad.z.d.e.h.c.ad.c.t. vt autem g.z.ad.z.e.eſt.g.b.ad.b.l.habebit igitur.h.c.ad.c.t. compoſitam rationem ex ratione b.g.ad.b.l.& rectæ ad tranſuerſam,& per demonſtrata in.41.propoſitione triangulus g.c.m.differt a triangulo.b.g.l.per.h.t.c.nam in duplis ipſius parallelogramis eadem demonſtratum eſt.



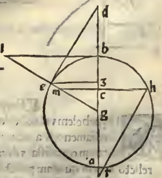
℞ ℞ 11643 p̄ ℞ 4889
43841 18913

℞ quadrata & Cubica 33899





℞ Cronica 4681

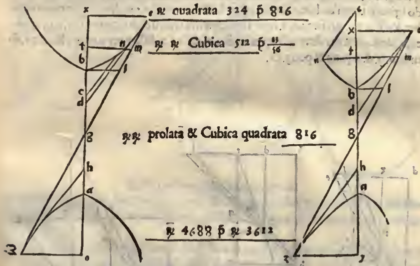


Propoſitio, Quadrageſimaquarta.

SI vnam contrapoſitarum linea tangens coincidat diametro, & a tactu ducatur quædam linea ordinate ad diametrum, & hęc per ſumitatem alterius ſectionis equidiſtans ducatur coincidens lineę per tactum & centrum ductæ, relicto au-

tem in ſectione, cui contigit, puncto, ducantur duo lineæ ad diametrum, quarum hæc quidem ad tangentem, Illa vero ad applicatam a tactu ordinate, factus ſub ipſis triangulus, cuius abſcidit triangulum, applicata vltra centrum ſectionis, minor erit eo, quæ fit ex ea quæ ex centro triangulo, ſimili abſciſo.

¶ Sint contrapoſitæ.a.z.&.b.e. diameter autem ipſarum.a.b.centrumq;.g.& a quodam puncto eorum, quæ ſunt in ſectione.z.a. quod ſit.z. ducatur.z.h.tangens ſectionem, ordinate autem.z.o. & coniungatur.g.z.& producatur vt.g.e.& per.b. ducatur.b.l. equidiſtans.z.o.& relictum ſit quodam punctum in ſectione.b.e.quod ſit.n.& ab.n. ordinate applicetur.n.t.& ducatur.n.c.equidiſtans.z.h.Dico q; triangulus.n.t.c.triã gulo.g.m.t.minor eſt triangulus.g.l.b.nam per.e.tangens ſectionem.b.e.ducatur.e.d.ordinate autem.e.x.quoniam igitur contrapoſitę ſunt.z.a.&.b.e.quarum diameter a.b.& quæ per centrum.z.g.e.& tangentes ſectiones.z.h.&.e.d.&.d.e.equidiſtans eſt.z.h.&.n.c.eſt equidiſtans.z.h.Igitur &.n.c.equidiſtans eſt.e.d.&.m.t.b.l.quoniã igitur.b.e.eſt hyperbole, cuius diameter.a.b.centrum autem.g.&.d.e.tangens ſectionem, ordinate autem.e.x.&.b.l.eſt equidiſtans.e.x.& relictum eſt in ſectione, punctum.n.a quo ordinate ducatur.n.t.equidiſtans autem c.n.ducta eſt.d.e.Igitur triangulus.n.t.c.triangulo.t.m.g.minor eſt per triangulũ.b.g.l.hoc.n.in.43.propoſitione demonſtratum eſt.

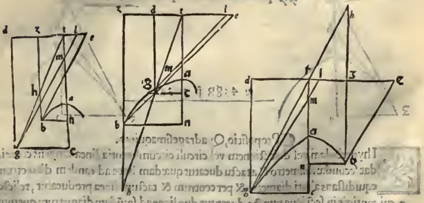


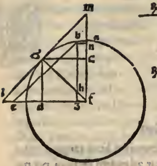
¶ Propoſitio, Quadrageſima quinta.

SI hyperbolem vel defectionem vel circuli circumferentia linea tangens coincidat ſecundæ diametro & a tactu ducatur quædam linea ad eandem diametrum equidiſtans alteri diametro & per centrum & tactum linea producatur, relicto q; cui contigit in ſectione puncto, ducantur duo lineę ad ſecũdam diametrum quarum

hęc quidem ad tangentem, Illa vero ad applicatam factus ſub ipſis triangulus cuius abſcindit trianguli applicata vltra centrum, In hyperbole quidem maior erit triangulo, cucus baſis rangens, ſumitas autem cẽtrũ ſectionis, in defectione autẽ & circuli circumferẽtia cũ abſciſo, equalis erit triãgulo, cuius baſis tangens, ſumitas aũt centrũ ſectionis.

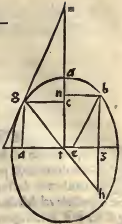
Sit hyperbole vel defectio vel circuli circuferentia.a.b.g. cuius diameter.a.t. Secũda autem.t.d. centrum autem.t.&.g.m.l. tangat.ad.g.&.g.d. ducatur ad.a.t. & coiuncta.t.g. producatur, & relictum ſit in ſectione contingens punctum.b.&.a.b. ducantur.b.e.&.b.z. vſq; ad.l.g.&.g.d. Dico q; In hyperbole.b.e.z. triangulus maior eſt.b.d.z. per.l.g.t. in defectione autem & circulo cum.z.h.t. equalis eſt.g.l.t. ducantur.n.g.c.&.b.n.ad.d.t. quoniam igitur.g.m. tangit,&.g.c. applicata eſt.g.c.ad.c.t. compoſitam habet rationem ex ea quam habet.m.c.ad.c.g.& ex ea quam habet rectum ſpeciei latus ad tranſuerſum, vt autem.m.c.ad.c.g.g.d.ad.g.b. Igitur.g.c.ad.c.t. rationem habet compoſitam ex ratione.g.d.ad.d.l.& rectæ ad tranſuerſam, & eſt.g.d.l. triangulus ſpecies que fit ex.c.t.&.g.c.t. ideſt.g.d.t. quæ fit ex.g.c. ideſt.d.t. Igitur.g.d.l. triãgulus.g.c.t. in hyperbole quidem maior erit, per triangulum qui fit ex.a.t. ſimili.g.d.l. in defectione autem & circulo.g.d.t. cum.g.d.l. equalis eſt eidem, nam in duplis ipſorum, hoc demonſtratum eſt in.41. propoſitióne, quando igitur.g.d.l. triágulus ab.g.c.t. vel.g.d.c. differt per triangulũ qui fit ex.a.t. ſimili.g.d.l. differt autem & per triangulũ g.t.l. equalis igitur.g.t.l. triangulus ei qui fit ex.a.t. ſimili.g.d.l. triangulo, quãdo igitur triangulus.b.z.e. ſimilis eſt.g.d.l.&.h.z.t.g.d.t. eandem igitur rationẽ habet, & eſt.b.z.e. qui fit ex.n.t. inter applicatam & centrũ &.h.t.z. qui fit ex.b.n. applicata, ideſt.z.t.& per demonſtrata prius.b.z.e.ab.h.t.z. differt per eum qui fit ex.a.t. ſimilem.g.d.l. quare & per.g.l.t.

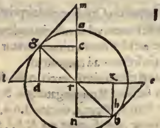


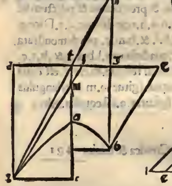


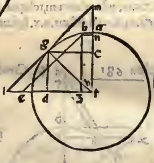
℞ Sciolta $\frac{2512 \text{ p̃ ℞ } 6863}{4899 \quad 16948}$

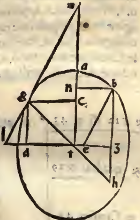
℞ quadrata $\frac{256}{}$ p̃ $\frac{1}{11}$







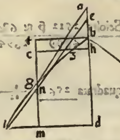




¶Propoſitio,Quadrageſimaſexta.

SI Parabolem linea tangens coincidat diametro, ducta per tactum equidiſtans Diametro ad eadem ſectioni, ductas in ſectione ad tangentem per medium ſecabit.

¶Sit Parabole, cuius diameter. a.b.d. & .a.g. tangat ſectionem, & per.g. ducatur t.g.m.equidiſtans.a.d.& relictum ſit in ſectione contingens punctum.l. & ducatur l.n.z. equidiſtans .a.g. Dico q.l.n.eſt equalis .n.z. ducantur ordinate .b.t. & .z.h.c. &.l.m. quoniam igitur per demõſtrata in.42.propoſitione equalis eſt.e.l.d. triangulus b.m.parallelogrammo &.e.z.h.b.c.reliquum igitur parallelogrãmum.h.m.reliquo.l.z.h.d.quadrilatero eſt equale, Commune auferatur.m.d.h.z.n. quinq; laterũ reliquus e.z.n.triangulus equalis eſt.l.m.n. &.c.z. eſt equidiſtans.l.m. Igitur.z.n. equalis .l.n.



Propoſitio, Quadrageſimaſeptima.

SI hyperbolem vel defectionem vel circuli circumferentiam linea tangens coincidat diametro, & per tactũ & centrum linea ducatur ad eadem ſectioni, per medium ſecabit ductas in ſectione ad tangentem.

Sit hyperbole vel defectio vel circuli circũferentia, cuius diameter.a.b.cẽtrum autem g.& ducatur.g.e.tangens ſectionẽ & coniungatur.g.e.& producatur & relictum ſit contingẽs in ſectione punctum.n.& per.n.ducatur.t.n.o.h.equidiſtans.d.e.Dico ꝙ n.o.eſt equalis.o.h.applicentur.n.ordinate.z.n.x.&.b.l.&.h.m.c.per demonſtrata igitur in.45.propoſitione equalis eſt triangulus.t.n.z.quadrilatero.l.b.x.z.& .h.t.c.triangulus.l.b.c.m.& reliquum igitur.n.h.c.z.quadrilaterũ reliquo.m.c.x.z.eſt equale, Commune auferatur.o.n.z.c.m.quinqꝫ laterum, reliquus igitur.o.m.h.triangulus reliquo.n.x.o.eſt equalis, & eſt.m.h.equidiſtans.n.x.Igitur.n.o.eſt equalis.o.h.

℞ 512 m̃ ℞ 43

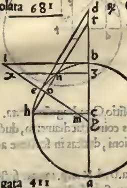
℞ prolata 681

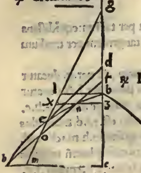
℞ Cronica & ſciolta 481

℞ quadra 829

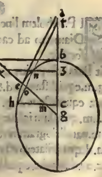
℞ Ligata 3687 $\frac{43}{93}$

℞ Cronica 43





℞ Ligata 411

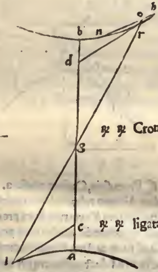


¶Propoſitio, Quadrageſimaoctaua.

SI vnam contrapoſitarum linea tangens coincidat Diametro & per tactum & centrum linea producta ſecet alteram ſectionem, quæ ducta eſt in altera ſectione ad tangentem per medium ſecabitur a producta.

¶Sint contrapoſitæ, quarum diameter.a.b.centrum autem.g.&.c.l.tangat ſectionem,&, coniungatur.g.l.& producatur & relictum ſit quodam puuctũ in ſectione quod ſit.n. & per.n.ducatur.n.h.equidiſtans.l.c Dicoq; n.o.eſt equalis.o.h.ducatur.n.per.c.tágens ſectionem.e.d.Igitur.e.d equidiſtans eſt.l.e.quare.n.h.quoniá igitur.b.n.h.eſt hyperbole, cuius centrum.g.& tangens.d.e.& cõiuncta eſt.g.c.& relictum eſt in ſectione punctum.n.& per ipſu n ducta eſt.n.h.equidiſtans.d.e.per prius demonſtratum in hyperbole equalis eſt.n,o.o.h.

℞ ℞ Cubica quadrata 64 ℞ ligata 14963



℞ Cronica ligata 4681 ℞ ℞ Cronica & prolata 14933

℞ prolata 1616 p̃ 4 ℞ ℞ ligata & ſciolta 4931

¶Propoſitio, Quadrageſimanona.

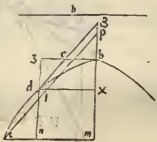
SI Parabolem linea tangens coincidat diametro & per tactum ducatur equidiſtans diametro, & a ſumitate ducatur ordinate applicata, & factum ſit vt ſectio tangentis, quæ eſt inter ductam & tactum ad ſectionem equidiſtantis, quæ eſt inter tactum & ductam ſic linea quædam ad duplam tangentis, quæ a ſectione ducta eſt ad ductam lineá per tactum equidiſtantem diametro, equidiſtans tangenti poterit id quod contentum rectangulum ſub terminante linea & recepta ſub ipſa vltra centrũ.

¶Sit Parabole cuius diameter.m.b.g.tangens autem.g.d.& per.d.ducatur.z.d.n.equidiſtans.b.g.ordinate autẽ ducatur.z.b.& fiat vt.e.d.ad.d.z.linea quædam quæ ſit.h. ad duplam.d.g.& relictum ſit quodam punctũ in ſectione quod ſit.c.& per.c.duca-

tur.c.l.p.equidiſtans.g.d. Dico q; id quod fit ex.c.l. equale eſt ei quod eſt ſub.h. &.d. l.ideſt q; diametro exiſtente.d.l.recta eſt.h.ducatur.n.ordinate.d.x.& .c.n.m.& quoniam.g.d.tangit ſectionem, ordinate autem applicata eſt.d.x.equalis eſt .g.b.b.x.& b.x.equalis eſt.z.d.Igitur &.g b.eſt equalis.z.d.quare & triangulus.e.b.g.triangulo e.z.d.Commune ponatur.d.e.b.m.n.figura,igitur.d.g.m.n.quadrilaterum eſt equale.z.m.parallelogrammo.idem.c.m.h.triangulo,Commune auferatur.l.p.m n quadrilaterum,reliquus igitur.c.l.n.triangulus eſt equalis.l.g.parallelogrammo, & eſt angulus qui eſt ſub.d.l.p.equalis ei qui eſt ſub.c.l.n. duplum eſt igitur quod eſt ſub.c.l.n. ei quod eſt ſub .l.d.g. & quoniam eſt vt.e.d.ad.d.z.c.l.ad n.l.igitur vt .h. ad duplam g.d.c.l.ad.l.n.Sed vt.c.l.ad.l.n.quod fit ex .c.l.ad id quod eſt ſub.c.l.n. vt autem.h, ad duplam.g.d.quod eſt ſub h.d.l.ad id quod eſt bis ſub.g.d.l.& Viciſſim,equale autem eſt quod eſt ſub.c.l.n.ei quod eſt bis ſub.g.d.l.equale igit̃ & quod fit ex.c.l.ei quod eſt ſub.h.d.l.

℞ Cronica 15910

℞ Ligata 1029



℞ quadrata 729

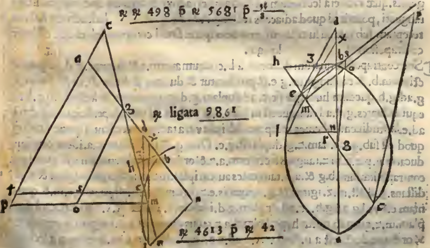
℞ prolata 841

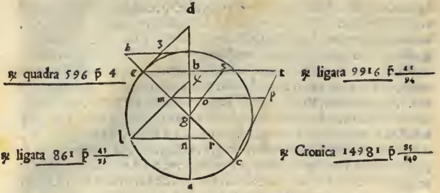
Propoſitio, Quinquageſima.

SI hyperbolem vel defectionem vel circuli circumferentiam linea tangens coincidat diametro, & per tactum & centrum linea producatur, & a ſumitate ducta linea, ordinate applicata coincidit ductæ lineę per tactum & centrum,& factũ ſit vt ſectio tangentis quæ eſt in ter tactum & applicatam,linea quedam ad duplam tãgentis:quæ a ſectione ducta eſt ad ductam lineam per tactum & centrum equidiſtans tangenti poterit id quod quedam ſuperficies rectangula adiacens ad latitudinẽ habens receptam ſub ipſa.vltra tactum.in hyperbole excedens ſpecie ſimili contento ſub dupla eius quæ eſt inter centrum & tactum & lineam in defectione autem & circulo deficiens.

Sit hyperbole vel defectio vel circuli circumferentia,cuius diameter a.b,centrum autem.g.tangens autem.g.d.c.& cõiũcta.g.e.producat̃ in vtrãq; & ponatur,e.g.equalis.g.c. & per .b ordinate producatur.b.z.h.per.e.autem ducatur.e.t.ad .e.g. & fiat vt.z.e.ad.e.h.ſic.e.t.ad duplam.e.d.& coniuncta.t.c.producatur, & relictum ſit quodam in ſectione punctum.l.& per ipſum ducatur.l.m.x.equidiſtans.e.d.&.l.z.n.b.h. &.m.p.e.t.Dico q; id quod fit ex.l.m.equale eſt quod eſt ſub .e.m.p.ducatur.n.per.g. g.s.o.equidiſtans.c.p.& quoniam.e.g.equalis eſt.g.e.vt autem.e.g.ad.c.g.e.s.ad.s.t.

Igitur.e.s. equalis eſt.s.t & quoniam eſt vt.z.e.ad.e.h.t.e.ad dup'am lineæ.e.d.& eſt e.s. dim dia lineæ.e.t. eſt igitur vt.z.e.ad.e.h.s.e.ad.e.d.vt autem.z.e.ad.e.h.l.m. ad.m.r.vt igitur.l.m ad.m.r.s.e.ad.e.d. & quoniam triangulus.r.n.g. triangulo.h.b. g.id eſt.g.d.e.in hyperbole maior demonſtratus eſt, in defectione vero & circulo minor.l.n.x. Communibus ablatis in hyperbole quidem triangulo e.g.d.& n.m.t.x.quadrilatero, in defectione autem & circulo triangulo.m.x.g.triangulus.l.m.n.equalis eſt m.e.d.x.quadrilatero, & eſt.m.x.equidiſtans.d.e. & quæ eſt ſub.l.m.r.equalis eſt ei quæ eſt ſub.e.m.x.equale igitur eſt quod eſt ſub.l.m.r.id quod eſt ſub.e.m.& vtroq; e.d. &.m x. & quoniam eſt vt m.g. ad.g.t.m.x.ad.e.d &.m.o.ad.s.e.vt igitur.m.o. ad.e.s.m.x.ad.d.e.& Componenti vt vtraq;.m.o.&.s e.ad.e.s.ſic vtraq;.m.x.&.e.d. ad.e.d. viciſſim vt vtraq;.m.o.&.s.e.ad vtranq;.x.m.&.e.d.s.e.ad.e.d. viciſſim vt vtraq;.m o.&.s.e.ad vtranq;.x.m.&.e.d.s.e.ad.e.d. Sed vt quidem m.o.&.s.e.ad vtranq;.m.x.&.d.e.quod eſt ſub vtraq;.m.x.&.e.d.&.e.m. vt autem.s.e.ad.e.d.z.e. ad.e.h.id eſt.l.m.ad.m.r.idem quod fit ex.l.m.ad id quod eſt ſub.l m.r.vt igitur quod eſt ſub vtraq; m.o.&.e.s.&.m.e.ad id quod eſt ſub vtraq; m.x.&.e.d.&.e.m, quod fit ex.l.m.ad id quod eſt ſub.l.m.r.& viciſſim vt id quod eſt ſub vtraq;.m.o.&.e.s. &.m.e.ad id quod fit ex.m.l.ſic quod eſt ſub vtraq;.m.x.&.e.d.&.m.e.ad id quod eſt ſub.l.m.r.equale igitur & id quod fit ex.l.m.ei quod eſt ſub.e.m.& vtriuſq;.m.o. &.e.s.& eſt.s.e.equalis.s.t.&.s.t.o.p. Igitur qd' fit ex.l.m.ei quod eſt ſub.e.m.p.





¶ Propoſitio, Quinquageſimaprima.

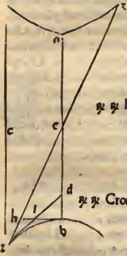
Sit alteram Compoſitarum linea tangens coincidat diametro, & per tactum & centrum producta ſit quædam linea vſq; ad alteram ſectionem & a ſumitate linea ducatur ordinate applicata & coincidat lineæ per tactum & centrum ductæ & fiat vt ſectio tangentis quæ eſt inter ductam & tactum ad ſectionem ductæ per tactum & centrum que eſt inter tactum & applicatam, linea quedam ad duplam tangentis. quæ in altera ſectionum ad ductam per tactum & centrum lineam equidiſtans tangenti, poterit id quod adiacens rectangulum ad latitudinem habens receptam ſub ipſa ad ſumitatem, excedens ſpecie ſimili contento ſub ea que eſt inter contrapoſitas & lineam.

¶ Sint contrapoſitæ quarum diameter. a.b. centrum autem. e. & ducatur. g. d. tangens ſectionem. b. & coniungatur. g. e. & producatur & ducatur ordinate. b. l. h. & fiat vt. l. g. ad. g. h. quedam linea que ſit. c. ad duplam. g. d. q; igitur que in ſectione. b. g. ſunt equidiſtantes. g. d. ad eam que eſt in linea. e. g. poſſunt id quod ſuperficies adiacentes ad. e. latitudinem habentes receptam ſub ipſis vltra tactum excedentia ſpecie ſimili ei quod eſt ſub. g. z. c. nam. z. g. dupla eſt. g. e. Dico q; & in ſectione. z. a. idem contigit ducatur. n. per. z. m. z. tangens ſectionem. a. z. & ordinate applicetur. a. n. x. & quoniam contrapoſitæ ſunt. b. g & . a. z. tangentes autem ipſas. m. z. & . g. d. equalis igitur & equidiſtans. g. d. eſt. m. z. igitur & . g. e. equalis. e. z. Igitur & . e. d. eſt equalis. e. m. & quoniam eſt vt. l. g ad. g. h. c. ad duplam. g. d. ideſt. m. z. Igitur vt. x. z. ad. z. n. c. ad duplam. m. z. quando igitur hyperbole eſt. a. z. cuius diameter. a. b. tangens autem. m. z. & ordinate ducta eſt. a. n. & eſt vt. x. z. ad. z. n. c. ad duplam. z. m. quæcunq; a ſectione equidiſtantes. z. m. ducantur ad eam que in linea. e. z. poterunt id quod contentum rectangulum ſub. c. linea, & receptæ ſub ipſis vltra punctum. z. excedens ſpecie ſimili, ei quod eſt ſub. g. z. c.

¶Demonſtratis autem his, ſimul manifeſtum eſt ꝙ in parabole ſingula ductarũ linearum ad diametrum ex generatione diameter erit: In hyperbole & defectione & contrapoſitis ſingula per centrum ductarum linearum. & quoniã in parabole ductę ad ſingulam diametrum ad tangentes poterunt id quod adiacentia ad ipſam rectangula, In hyperbole autem & contrapoſitis, id quod adiacentes ad ipſam ſuperficies & excedentes eodem ſpecie. In defectione autem id quod adiacentia ad ipſam & deficientia eodem ſpecie & quoniam quæcunq; demonſtrata ſunt circa ſectiones contingẽtia compatis principalibus diametris & aliis diametris aſſumptis eadem accidet.

℞ prolata 9983/11448 p̃ ℞ ſciolta 48939/69983 m̃ ℞ 7333/8496 p̃ m̃ 8

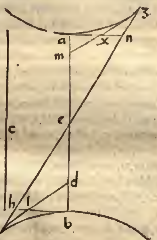
℞ ℞ ligata 4383 p̃ ℞ ſciolta 6512 m̃ ℞ Cronica 1024 p̃ 16



℞ 43916/63389 p̃ ℞ 981/1213

℞ ℞ ligata 4896/8693 p̃ ℞ 512/648

℞ ℞ Cronica 4889 p̃ ℞ 488



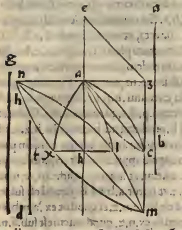
¶Propoſitio, Quinquageſimaſecunda.

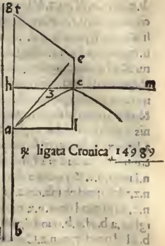
Linea data in plano ad vnum punctũ terminata inuenire in plano coni ſectionem vocatam parabolem cuius diameter data linea, ſumitas terminus lineæ, quæ autem a ſectione ducta ſit ad diametrum in dato angulo poterit id quod contentum rectangulum ſub recepta ſub ipſa ad ſumitatem ſectionis & alterius cuiuſdam datæ lineæ.

¶Sit poſitione data linea .a.b. terminata ad .a. alia autem magnitudini, datus autem angulus ſit prius rectus, oportet vtiq; inuenire in ſubiecto plano parabolem cuius diame

ter.a.b.ſumitas autem.a.recta autem.g.d.ductę autem ordinate in recto angulo applicentur, ideſt vt axis ſit.a.b.producatur.a.b.ad.e. & relicta ſit quarta pars.g.d.que ſit g.h.&.e.a.maior ſit.g.h.&.g.d.&.e.a.media proportionalis relicta ſit.t.eſt igitur vt g.d.ad.e.a.id quod ſit ex.h.ad id quod ſit ex.e.a.&.g.d.minor eſt.e.a.vel quadrupla, Igitur & quod ſit ex.t.minus eſt eo quod ſit ex.e.a.vel quadruplum, Igitur.t.minor eſt e.a.vel dupla quare duo.e.a.maiores ſunt.t.poſſibile igitur eſt, ex.t. & duabus.e.a. triangulũ cõſtituere, cõſtituatur igitur ſuper.e.a.triãgulus.e.a.z.rectus ad ſubiectum planũ, quare equalẽ eſſe.e.a./a.z.&.t./z.e.& ducatur.a.c.equidiſtãs.z.h.&.z.c.&.e.a. & intelligatur conus cuius ſumitas punctũ.z.baſis autẽ circa diametrũ.c.a.circulus rectus exiſtẽs ad planũ per.a.z.c.erit igitur rectus conus eſt eni.a.z.equalis.z.c.ſecetur vtiq; conus plano equidiſtãti circulo.e.a.& faciat ſectionẽ.m.n.x.circulũ, rectũ videlicet ad planũ p.m.z.n.& ſit circuli.m.n.x.&.m.n.z.triãguli cõmunis ſectio.m.n.Diameter igitur eſt circuli. Sit igitur ſubiecti plani & circuli cõmunis ſectio.z.l.quando igitur.m.n.x.circulus rectus eſt ad.m.z.n.triangulũ rectum autẽ eſt & ſubiectum ad m.z.n.triangulum cõmunis igitur.z.l.recta eſt ad triangulũ.m.z.n.ideſt.c.z.a.Igitur & ad omnes ductas eius lineas & exiſtẽtes in triangulo recta eſt quare & ad vtranq;.m.n.&.a.b.rurſus quoniam Conus cuius baſis circulus.m.n.x.ſumitas autem pũctum.z. ſecatus eſt plano recto ad triangulum.m.z.n.& facit ſectionem circulum.m.n.x.ſecatus autem eſt & altero plano ſubiecto ſecanti baſi coni ad rectam.z.l.ad rectos exiſtenti lineę.m.n.quę Communis ſectio eſt circuli.m.n.x.& trianguli.m.z.n. a.b.equidiſtans eſt.z.c.m.lateri Coni, Igitur facta ſectio Coni in ſubiecto plano parabole eſt, diameter autem ipſius.a.b.ductæ autem a ſectione ad.a.b.ordinate in rectam applicabuntur angulo, equidiſtantes.n.ſunt.z.l.ad rectos exiſtenti.a.b.& quoniam tres proportionales ſunt.g.d.&.t.&.e.a.equalis autem.e.a.eſt.a.z.&.z.c.&.t./e.z.&.a.c.eſt igitur vt.g.d.ad.a.c.a.c.ad.a.z. Igitur & vt.g.d.ad.a.z.quod ſit ex.a.c.ad id quod ſit ex.a.z.ideſt quod eſt ſub.a.z.c.recta igitur eſt.g.d.ſectionis hoc.n.demonſtratum eſt in.11.propoſitione.

¶ Iiſdem ſubiectis non ſit datus angulus rectus & ponatur ipſi equalis ille qui eſt ſub.t.e.e.& ſit.a.t.dimidia.g.d.& ex.t.ad.a.e.cathetus ducatur qui ſit.t.e.& per.e.ducatur e.l.equidiſtans.b.t.& ab.a.ad.e.l.ducatur cathetus.a.l.& ſecetur.e.l.per medium ad c.& ex.c.ducatur.c.m.ad rectos.e.l.& producatur ad.z.h.& quod ſit ex.a.l.equale ſit ei quod eſt ſub.c.l.m.& duarum datarum linearum.l.e.&.c.m.&.c.l.quidem poſitione terminatæ ad.c.&.c.m.magnitudine, & ãguli recti deſcribatur parabole, cuius diameter.c.l.ſumitas uero.c.recta autem.c.m.vt prius demonſtratum eſt, Venient autem per.a.propter q; equale eſt id quod ſit ex.a.l.ei quod eſt ſub.l.c.m.&.a.e.tanget ſectionem, propter q;.e.c.eſt equalis.c.l.& eſt.t.a.equidiſtans.e.l.igitur.t.a.b.diameter eſt ſectionis, ductę autem ad ipſam a ſectione, equidiſtantes.a.e.per medium ſecabuntur ab.a.b.applicabuntur autem in angulo eo qui eſt ſub.t.a.e.& quoniam equalis eſt angulus qui eſt ſub.a.e.t.ei qui eſt ſub.a.h.z. Communis autem eſt que eſt ad.a.ſimilis igitur eſt triangulus.a.t.e.triangulo.a.h.z. vt igitur.t.a.ad.e.a./z.a.ad.h.a. vt igitur dupla.a.t.ad duplã.a.e./z.a.ad.a.h.eſt autẽ.g.d.dupla.t.a.vt igitur.z.a.ad.a.h./g.d. ad duplam.a.e.& propter demõſtrata in.43.propoſitione, recta eſt.g.d.



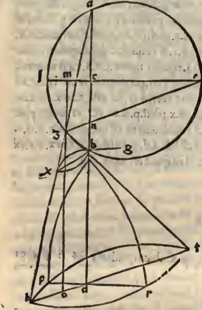


¶Propoſitio, Quinquageſimatertia.

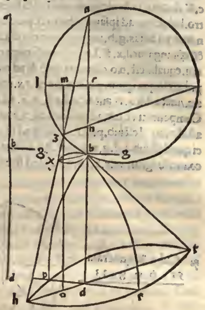
QVabus datis lineis terminatis ad rectos inuicē, altera producta in eadē recto āgulo, inuenire in ꝑducta coni ſectionē nūcupatā hyperbolē in eodē plano lineis, vt producta per cētrū ſit ſectionis, ſumitas autē punctū ad angulū, quę aūt ducitur a ſectione ad diametrū angulū faciens equalē dato poterit id quod adiacēs rectāgulō ad alterā lineā latitudinē habens receptam ſub applicata ad ſumitatē excedens ſpecie ſimili & ſilr̄ poſito ſub lineis à pricipio: ¶Sint duo datę lineę terminatę ad rectos inuicē.a.b.&.b.g.& producatur.a.b.ad.d.oportet aūt iuenire in plano per.a.b.g.hyperbolē, cuius quidē diameter erit.a.b.d.ſumitas autē.b.recta autē.b.g. ductę autē a ſectione ad.b.d.in dato angulo poterūt id quod a diacentia ad.b.g.latitudinē habentia receptas ab ipſis ad.b.excedētia ſpecie ſimili & ſimiliter poſito ei qui eſt ſub.a.b.g. Sit datus āgulus prius rectus & exurgat ex.a.b.planū rectū ad ſubiectū planū & in ipſo circa.a.b.circulus deſcribatᷣ qui ſit.a.e.b.z.quare ſectio diametri circuli, que eſt in ſectione.a.e.b.ad ſectionē diametri, quę eſt in.a.z.b.maiorē rationē non habeat ea quā habet.a.b.ad.b.g.& ſecetur.a.e.b.per mediū ad.e.& ducatur ab.e.ad.a.b.cathetus.e.c.& producatur ad.l.diameter igitur eſt.e.l. Si igitur vt.a.b.ad.b.g./e.c.ad.c.l. Si aūt nō, fiat vt.a.b.ad.b.g./e.c.ad.c.m.minorē.c.l.& per.m.ducatᷣ.m.z.eq̄diſtās.a.b.& cōiungātur.a.z.&.e.z.&.z.b.& per.b.ducatur.b.x.equidiſtās.z.e. qm̄ igitᷣ equalis eſt angulus q̄ eſt ſub.a.z.e.ei q̄ eſt ſub.e.z.b.Sed qui eſt ſub.a.z.e.eſt equalis ei q̄ eſt ſub.a.x.b.& qui eſt ſub.e.z.b.ei q̄ eſt ſub.x.b.z.eſt equalis, Igitᷣ & q̄ eſt ſub.x.b.z.ei qui eſt ſub.z.x.b.eſt equalis, Igitur &.b.z./z.x. Intelligatur conus cuius ſumitas punctum.z.baſis autem Circulus qui eſt circa diametrum.b.x.rectus exiſtens ad.b.z.e.tiangulum, erit igitur conus rectus, equalis.n.eſt.z.b/z.x.producantur vtiq̧

b.z. & .z.x. & .m.z. & ſecetur conus plano equidiſtanti circulo.b.x.erit igitur ſectio circulus.Sit.p.t.r.quare diameter erit circulus.h.t.Cõmunis autem ſectio.h.t. circuli & ſubiecti plani ſit.p.d.r.ad vtramq̧.h.t.&.d.b.recta, vterq̧.n.circulorũ.x.b.&.t.h.rectus eſt ad.z.h.t.triangulum, eſt autem & ſubiectum planum rectum ad.z.h.t.Igitur & ad omnes tangẽtes ipſam lineas & exiſtens in eodem plano rectos facit angulos, & quoniam Conus,cuius baſis circulus.h.t.ſumitas autem punctm.z.ſecatum eſt plano recto ad triangulum.z.h.t. & facit ſectionem circulum .h.p.t.r.ſecatum autem eſt & altero plano ſubiecto ſecanti baſim Coni ad rectam.p.d.r.ad rectos.h.d.t.Communis autem ſectio ſubiecti plani &.h.z.t.idem.d b.producta ad b.coincidit.h.z.t.ad a.hyperbole igitur erit ſectio per prius demonſtrata.p.b.r.cuius ſumitas quidem punctum.b.ductæ autem ad.b d.ordianate in recto angulo applicabuntur, equidiſtantes n.ſunt.p.d.r.& quoniam eſt vt.a.b.ad.b.g./e.c.ad.c.m.vt autem.e.c.ad.c.m./e.n.ad n.z.ideſt quod eſt ſub.e.n.z.ad id quod fit ex.n.z.vt igitur.a.b.ad.b.g.quod eſt ſub.e.n.z.ad id quod fit ex.n.z.equale autem eſt quod eſt ſub.e.n.z.ei quod fit ex.a.n.b.vt igitur.a.b.ad.g.b.quod eſt ſub.a.n.b. ad id quod fit ex.n.z. quod autem eſt ſub.a.n.b.ad id quod fit ex.n.z.Compoſitam habet rationem ex ratione.a.n.ad.n.z.&.b.n.ad n.z.Sed vt.a.n.ad.n.z./a.d.ad.d.h.&.z.o.ad.o.h.vt autẽ.b.n.ad.n.z./z.o.ad.o.t.Igitur.a.b.ad.b.g.compoſitam habet rationem ex ea quam habet.z.o.ad.o.h.&.z.h.ad o.t.ideſt quod fit ex.z.o.ad id quod eſt ſub.h.o.t.eſt igitur vt.a.b.ad.b.g quod fit ex z.o.ad id quod eſt ſub.h.o.t. & eſt.z.o.equidiſtans.a.d.tranſuerſum igitur latus eſt a.b.rectum autem.b.g.hæc.n.in.12.propoſitione Demonſtrata ſunt.Non ſit datus angulus rectus & ſint datæ lineę.a.b.&.a.g.datus autem angulus ſit equalis ei qui eſt ſub b.a.t.oportet igitur deſcribere hyperbolem cuius diameter erit.a.b.recta autem.a.g.ductæ autem in angulo qui eſt ſub.t.a.b.applicabuntur.Secetur.a.b.per mediũ ad.d.& in.a.d.deſcriptus eſt ſemicirculus.a.z.d.& ducta eſt.z.h.in ſemicirculum equidiſtans.a.t.faciens rationẽ eius quod fit ex.z.h.ad id quod eſt ſub.d.h.a.candẽ rationi a.g.ad.a.b.& coniũgatur.z.t.d.& producatur &.z.d.t.media proportionalis ſit.d.l.& ponatur.d.c.equalis.l.d.quod autẽ eſt ſub.l.z.m.equalis ei quod fit ex.a.z.& cõiũgatur.c.m.& per.l.ducatur.l.n.ad rectos.c.z.& producatur ad.x.& ex duabus datis lineis terminatis ad rectos inuicẽ.c.l.&.l.n.deſcribatur hyperbole,trãſuerſum autẽ latus erit.c.l.recta autẽ.l.n.ductę ad diametrũ a ſectione in recto angulo latitudinẽ habẽtes receptas ab ipſis.a.d.l.excedẽtia ſimili ſpecie ei quod eſt ſub.c.l.n.Veniet aũt ſectio pct.a.equale.n.eſt id quod fit ex.a.z.ei quod eſt ſub.l.z.m.& tãget a.t.ipſam quod.n.eſt ſub.z.d.t.equale ei eſt quod fit ex.d.l.quare.a.b.diameter eſt ſectionis & quoniã eſt vt.g.a.ad duplã.a.d.ideſt.a.b.id quod fit ex.z.h.ad id quod eſt ſub.d.h.a.Sed.g.a.ad duplã.a.d.cõpoſitam habet rationẽ ex ea quã habet.g.a.ad duplã.a.t.& ex ea,quã habet dupla.a.t.ad duplã.d.a.ideſt.t.a.ad.a.d.ideſt.z.h.ad h.d.igitur.g.a.ad.a.b.Cõpoſitã habet rationẽ ex ratione.g.a.ad duplã.a.t.&ex ratione.z.h.ad.z.d.habet aũt quod fit ex.z.h.ad id qđ eſt ſub.d.h.a.cõpoſitã rationẽ & ex ea quã habet.z.h.ad.z.d.&.z.d.ad.z.a.Igitur cõpoſita ratio ex ratione.g.a.ad duplã.a.t.& ex ratione.z.h.ad.h.d.idem eſt cõpoſitę ex ratione.z.h.ad.h.a.& ex ratione.z.h.ad.h.d.Cõmunis auferatur ratio.z.h.ad.h.d.eſt igitur vt.g.a.ad duplã.a.t./z.h.ad.h.a.vt au

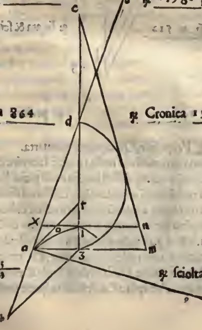
tẽ.z.h.ad.h.a./o.a.ad.a.x.vt igit.g.a.ad duplã.a.t./o.a.ad.a.x.qm̃ autẽ hoc erit,eſt a.g.ad quã poteſt, hoc.n.demõſtratũ eſt in propoſitione.l.



℞ 4869 p̄ ℞ ligata 9613



℞ 14981 p̄ ℞ ligata 6812



℞ 5883 p̄ ℞ ligata 864

℞ Cronica 1563 p̄ ℞ 13916

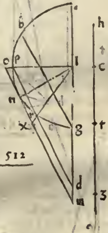
℞ Cronica 6913 p̄ $\frac{15}{33}$

℞ ſciolta 15999 p̄ ℞ 512

℄Sit ſemicirculus.a.b.g.in diametro.a.g.data autem ratio ſit ratio.e.z.ad.z.h.& deſcens ſit.f. adiacentia, ponatur.z.t.equalis.e.z.& ſecetur.t.h.per mediũ ad c.& ducatur in ſemicirculo contingẽs linea.g.b.in angulo qui eſt ſub.a.g.b.& a centro.l.ducatur ad ipſam cathetus & producta coĩcidat circũferẽtię ad.n.& p.n.ducat̃ n.m.equidiſtãs.g.b.tanget igitur circulũ,& fiet vt.z.t.ad.t.c./m.z.ad.n.x.equale.n.o.& cõiungãtur.l.x.&.l.o.ſecantes ſemicirculũ ad.p.r.& cõiungat̃.p.r.d.quãdo igitur x.n.equalis eſt.n.o.cõmunis autẽ & ad rectos.n.l.equalis igitur.l.o./l.x.eſt autem.l.p./l.r.reliqua igitur.p.o.equalis eſt.r.x.equidiſtãs igit̃ eſt.p.r.d./m.o.& eſt vt.z.t.ad t.c./m.x.ad.n.x.vt aũt.t.c.ad.t.h./n.x.ad.x.o.quare rurſus vt.h.t.ad.t.z./o.x.ad.x.m.Componenti vt.h.z.ad.z.t.ideſt ad.z.e./o.m.ad.m.x.ideſt.p.d.ad.d.r.vt autem.p.d.ad.d.r.quod eſt ſub.p.d.r.ad id quod fit ex.d.r.ęquale autem eſt quod eſt ſub.p.d.r.ei quod eſt ſub.a.d.g.vt igitur.h.z.ad.z.e.quod eſt ſub.a.d.g.ad id quod fit ex.d.r.ex conuerſo igitur vt.e.z.ad.z.h.quod fit ex.d.r.ad id quod eſt ſub.a.d.g.

℞ Cuba & quadrata 512 p̃ ℞ 8633

℞ Cubica quadrata 64 p̃ ℞ 4681



℞ ſciolta 14893 p̃ ℞ 512

℞ ligata & ſciolta 1913 p̃ 14/31

℞ 13859 p̃ ℞ 1024

℞ prolata 143988 p̃ ℞ 512

℄Propoſitio, Quinquageſimaquarta.

DVabus datis lineis terminatis ad rectos inuicẽ inuenire circa diametrũ alteram ipſarũ coni ſectionẽ vocatam defectionẽ in eodẽ plano lineis, cuius ſumitas erit pũctũ qđ eſt ad rectũ ãgulũ, applicatę ãt a ſectiõe ad diametrũ in dato ãgulo poterũt id qđ adiacẽtia rectãgula ad alterã lineã latitudinẽ habẽtia receptã ſub ipſis ad ſumitatẽ ſectiõis, deficiẽtia ſpecie ſimiliq; & ſimiliter poſito cõtẽto ſub datis lineis.

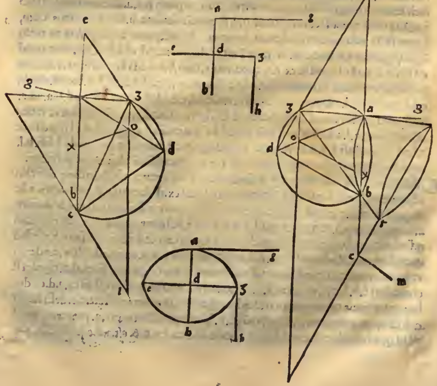
℄Sint duo datę lineę.a.b.&.a.g.ad rectos iuicẽ q̃rũ maior eſt.a.b.oportet ãt i ſub iecto plano deſcribere defectionẽ, cuius qdẽ diameter erit.a.b.ſumitas ãt.a.recta aũt.a.g.ductę autẽ applicabũtur a ſectione ad.a.b.in dato ãgulo & poterunt adiacẽtia ad.a.g.latitudinẽ habentia receptas ſub ipſis ad.a.deficiẽtia ſpecie ſimili & ſimiliter poſito ei

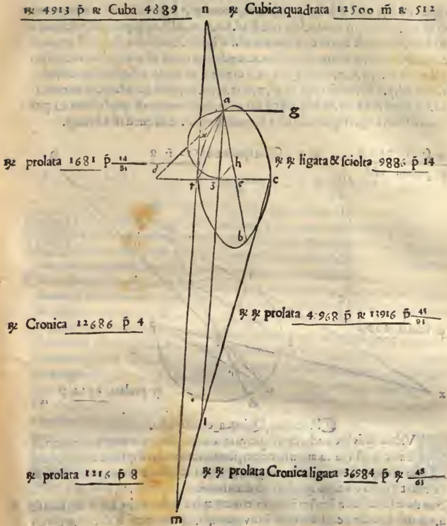
quod

quod eſt ſub.b.a.g. Sit aũt datus ãgulus prius rectus & exurgat ab.a.b. planũ rectũ ad ſubiectã & in ipſo in.a.b. ſectio circuli deſcribať que ſit.a.d.e.cuius per mediũ ſectio ſit.d.& ducãtur.d.a.&.d.b.& ponať.a.g.equalis.a.x.& per.x.ducať.x.o.equidiſtans d.b.& per.o.ducatur.o.x.equidiſtãs.a.b.& cõiungatur.d.z.& coicidat.a.b.producatur ad.e.erit vtiq; vt.a.b.ad.a.g./b.a.ad.a.x.ideſt.d.a.ad.a.o.ideſt.d.e.ad.e.z.& cõiungãtur.a.z.&.z.b.& producãtur & relictũ ſit in.z.a.cõtingẽs pũctũ.h.& per.h.ducatur.h.b.equidiſtãs d.e.& coicidat.a.b.producať ad.e.producta vtiq;.z.o.& coicidat.h.e.ad.l.quoniã igitur equalis eſt.a.d.circũferẽtia.b.d.equalis eſt ãgulus q eſt ſub a.b.d.ei qui eſt ſub.d.z.b.& qm̃ qui eſt ſub.e.z.a.equalis eſt duobus.ſ.ei qui eſt ſub.z.a.d.& ei qui eſt ſub.z.d.a.Sed ille q eſt ſub.z.d.a equalis eſt ei q eſt ſub.z.b.d.Ille aũt qui eſt ſub.z.d.a.ei qui eſt ſub.z.b.a.Igitur & ille qui eſt ſub.e.z.a.equalis eſt ei q eſt ſub.d.b.a.ideſt ei qui eſt ſub.b.z.d.eſt autẽ & equidiſtãs.d.e./.h.igitur ille qui eſt ſub e.z.a.equalis ei eſt qui eſt ſub.z.h.t.Ille vero qui eſt ſub.d.z.b.ei qui eſt ſub.z.t.h.quare & ille qui eſt ſub.z.h.t.ei qui eſt ſub.z.h.t.eſt equalis &.z.h.equalis eſt.t.z.deſcribatur circa.t.h.circulus.h.t.m.rectus ad.t.h.z.triãgulũ & itelligatur Conus cuius baſis circulus.h.t.n.ſumitas aũt punctũ.z.erit vtiq; conus rectus propter q.h.z.equalis eſt.z.t.& qm̃ circulus.h.t.n.rectus eſt ad planũ.t.h.z.eſt autẽ & ſubiectũ planũ rectũ ad planũ per.t.h.z.& Cõmunis igiť ſectio ipſorũ ad planũ p.h.t.z.recta erit.Sit vtiq; cõmunis ſectio ipſarum.c.m.igitur.c.m.recta eſt ad vtrãq;.a.t.&.e.h.& quoniã Conus cuius baſis quidẽ.h.t.n.circulus,ſumitas aũt pũctus.z.ſecatus eſt plano p axim & facit ſectionẽ triãgulũ.h.t.z.ſecatus aũt eſt & altero plano per.a.c.&.c.m.quod eſt ſub iectũ ad lineã.c.m.ad rectã exiſtentẽ.h.c.& planũ coicidit.z.h.&.t.z.lateribus Coni, Igitur facta ſectio,defectio eſt,cuius diameter.a.b.ductę autẽ applicabũtur in recto ãgulo,eqdiſtãtes.n.ſunt.c.m.& quoniã eſt vt.d.e.ad.e.z.qď eſt ſub.d.e.z.ideſt quod eſt ſub.b.e.a.ad id quod fit ex.e.z.quod autẽ eſt ſub.b.e.a.ad id quod fit ex.e.z.Compoſitã habet rationẽ ex ratione.b.e.ad.e.z.& ratione.a.e.ad.e.z.Sed vt.b.e.ad.e.z./b.e.ad.e.t.ideſt.z.l.ad.l.t.vt aũt.l.e.ad.e.z.a.c.ad.e h.ideſt.z.l.ad.l.h. Igiť.b.a.ad.a.g.cõpoſitã habet rationẽ ex ratiõe.z.l.ad.l.h.Igitur.b.a.ad.a.g.cõpoſitã habet rationẽ ex ratione.z.l.ad.l.h.& ex ratiõe.z.l.ad.l.t.que eadẽ eſt ei quã habet id quod fit ex z.l.ad id quod eſt ſub.h.l.t.vt igitur.b.a.ad.a.g.quod fit ex.z.l.ad id quod eſt ſub.h.l.t.quãdo autẽ hoc rectum ſpeciei latus eſt.a.g.vt demonſtratũ eſt in.3.propoſitione.

Iiſdẽ ſubiectis ſit.a.b.minor.a.g.& decẽs ſit circa diametrum.a.b.deſcribere defectionẽ,quare rectã eſſe.a.g.ſeceť.a.b.per mediũ ad.d.& ex.d.ducatur.e.d.z.ad rectos.a.b.& quod fit ex.z.e.equale ſit ei quod eſt ſub.b.a.g.quare.z.d.equalis eſt.d.e.& ducatur z.h.equidiſtãs a.b.& fiat vt.a.g.ad.a.b./e.z.ad.z.h.Igitur.e.z.maior.z.h.& quoniam qď eſt ſub.g.a.b.equale eſt ei quod fit ex.e.z.eſt vt.a.g.ad.a.b.quod fit ex.z.e.ad id quod fit ex.a.b.& id quod fit ex.d.z.ad id quod fit ex.d.a.vt.g.a.ad.a.b./e.z.ad.z.h.vt igitur.e.z.ad.z.h.quod fit ex.z.d.ad id quod fit ex.d.a.quod ãt fit ex.d.z.equale eſt ei quod eſt ſub.z.d.e.vt igitur.e.z.z.h.quod eſt ſub.e.d.z.ad id qď fit ex.a.d.ex duabus igitur lineis terminatis ad rectos inuicẽ poſitis,& maiore exiſtẽte.e.z.deſcribatur defectio,cuius diameter.e.z.recta aũt.z.h. Veniet autẽ ſectio per.a.propterea quod eſt id quod eſt ſub.z.d.e.ad id quod fit ex.d.a./e.z.ad.z.h.& eſt.a.d.equalis.d.b.Ve

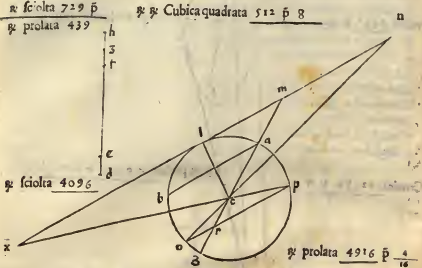
niet igitur & p.b.deſcripta igiť eſt defectio circa.a.b.& qm̄ eſt vt.g.a.ad.a.b.qđ fit ex z.d.ad id quod fit ex.d.a.equale ei qđ eſt ſub.a.d.b.vt igiť.g.a.ad.a.b.quod fit ex.d. z.ad id quod eſt.ſub.a.d.b.quare recta eſt.a.g.Sed nō ſit datus ãgulus rectus & ſit ipſi equalis ea que eſt ſub.b.a.d.& ſeceť.a.b.p mediū ad.e.& in.a.e.deſcribať ſemicircu-lus.a.z.e.& in eodē ducať.z.a.eqdiſtãs.a.d.faciēs rationē eius qđ fit ex.z.h.ad id qđ eſt ſub.a.h.e.eādē rationi.g.a.ad.a.b.& cōiūgatur.a.z.&.e.z.& producātur & relicta ſit.d.e.z.media proportionalis.e.t.& ponať.e.c.eq̄lis.e.t.& fiat qđ eſt ſub.t.z.l.equa lis ei quod fit ex.a.z.& cōiungať.c.l.&.a.t.ducať.t.m.x.ad rectos.t.z.facta eqdiſtãs lineę.a.z.l.recta.n.eſt que eſt ad.z.& ex duabus datis lineis terminatis ad rectos iuicē c.t.&.t.m.deſcribať defectio cuius diameter trãſuerſa.c.t.rectū aūt ſpeciei latus.t.m.du ctę ãt ad.t.c.i recto ãgulo applicabūtur, Veniet aūt ſectio p.a.propterea ꝙ qđ fit ex.z. a.equale eſt ei qđ eſt ſub.t.l.z.& qm̄.t.e.eſt eq̄lis.e.c.&.a.e./e.b. Veniet & p.b.ſectio & erit cētrū q̄dē.e.diameter aūt.a.e.b.&.d.a.tãget ſectionē propterea ꝙ id qđ ſub.d. e.z.eq̄le eſt ei qđ fit ex.e.t.& qm̄ eſt vt.g.a.ad.a.b.id qđ fit ex.z.h.ad qđ eſt ſub.a.h. e.Sed.g.a.ad.a.b.cōpoſitã habet rationē ex ratiōe.g.a.ad duplã.d.a.& ratiōe duplę d.a.ad.a.b.ideſt ex ratiōe.d.a.ad.a.e.qđ ãt fit ex.z.h.ad id qđ eſt ſub.a.h.e.cōpoſitã habet rationē ex ratiōe.z.h.ad.h.e,& ex ratiōe.z.h.ad.h.a.Igiť cōpoſita rō ex ratione g.a.ad duplã.a.l.& ratiōe.d.a.ad.a.e.eadē eſt cōpoſitę ex ratiōe.z.h.ad.h.e.& ratiōe z.h.ad.h.a.Sed vt.d.a.ad.a.e./z.h.ad h.e.cōi ablata hac ratiōe,erit vt.g.a.ad duplã.a. d.ſcʒ.h.ad.h.a.ideſt.x.a.ad.a.n.qñ ãt hoc erit,rectū ſpēi latus eſt.a.g.





¶ Sit ſemicirculus.a.b.g.& in ipſo linea quædã.a.b.& ponãtur duo lineę ięquales.d.e.&.e.z.& producat̃.e.z.ad.h.& ponatur z.h.eq̃lis.d.e.& ſecetur tota.e.h.in duas partes ad.t.& ſit centrũ circuli.c.& ab ipſo cathetus ducat̃ ad.a.b.& coincidat circũferentię ad.l.& per.l.ducat̃.l.m.equidiſtãs.a.b.& producta.c.a.coĩcidat.l.m.ad.m.& fiat vt.t.z.ad.z.h.l.m.ad.m.n.& ſit.l.x.equalis.l.n.& cõiungãtur.n.c.&.c.x.& producantur & completus circulus ſecet ipſas ad puncta.p.&.o.&.cõiungãtur.o.t.p.quoniam

igitur eſt vt.z r.ad z h./l.m.ad.m.n.componenti vt.t.h.ad.h.z/l.n.ad.n.m.econuerſo vt.z.h.ad.h.t./n.m.ad.n.l.& vt.z.h.ad.z.c./n.m.ad.n.x.& quoniam.n.l.equalis eſt.l.x. Communis autem & ad rectos eſt.l.c. Igitur.c.n.equalis eſt.c.x.eſt autem & c.equalis.c.p.equidiſtans igitur eſt.n.x./o.p.ſimilis igitur eſt triangulus.c.m.n.triangulo.o.c.r.&.c.m.x./p.r.c.eſt igitur vt.c m.ad.c.r/m.n.ad.r.o.Sed vt ipſa.c.m.ad.c.r./m.x.ad.p.r.& viciſſim vt.n.m ad.m.x./z.h.ad.z.c.ideſt d.c.ad.c.z.vt autem.o.r.ad.r.p.quod fit ex.o.r.ad id quod eſt ſub.o.r.p.equale autem eſt quod eſt ſub.o.r.p.ei quod eſt ſub.a r.g.vt igitur.d.c.ad.c.z.quod fit ex.o.r.ad id quod eſt ſub.a.r.g.

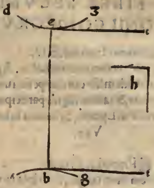


℃Propoſitio, Quinquageſimaquinta.

DVabus datis lineis ad rectos inuicem terminatis inuenire contrapoſitas, quarum diameter eſt vna datarum linearum, ſumitas autem termini lineæ ductæ autem in vtraq; ſectionum in dato angulo poterunt id quod ad vtranq; adiacentia & excedentia ſimili contento quod eſt ſub datis lineis.

℃Sint datæ lineæ duo ad rectos inuicem terminatæ.b.c.&.b.t.datus autem angulus ſit h.oportet deſcribere contrapoſitas circa vnam ex.b.c.&.b.t.quare & ductas applicari in angulo.h.& ex duabus datis lineis.b.c.&.b.t.deſcribatur hyperbole, cuius diameter erit tranſuerſa.b.c.rectum autem ſpeciei latus.t b.ductæ autem ad lineam.b.c.applicabuntur in angulo.h.& ſit.a.b.g.hoc.n quemadmodum oporteat fieri prius ſcriptum eſt, ducatur vtiq; per.c./e.c.ad rectos.b.c.equalis exiſtens.b.t.& deſcribatur ſimiliter alia hyperbole.d.c.z.cuius diameter.b.c.rectum autem ſpeciei latus.e.c.ductęq; a ſectione ordinate applicabuntur Deinceps in angulo.h.manifeſtum autem g.b.&.e.ſunt contrapoſitę Diameter autem ipſarum vna eſt, & duo rectę equales.

℞ 4841 p̄ ℞ 6888 ℞ Cuba 916 p̄ ℞ 4096



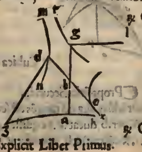
℞ 364 p̄ ℞ 86 ℞ ℞ 14694 p̄ ℞ ligata 512

¶ Propoſitio, Quinquageſima ſexta.

DVabus datis lineis ꝑ mediũ ſecatis inuicẽ deſcribere circa vtrãq; ipſarũ cõtrapoſitas ſectiones quare eſt earum eſſe ipſarũ cõiunctas diametros, & duarũ cõtrapoſitarũ diametrũ poſſe id quod ſpecies aliarũ cõtrapoſitarũ, ſimiliterq; & diametrum aliarum contrapoſitarum poſſe id quod ſpecies aliarum contrapoſitarum.

¶ Sint duo datę lineę ꝑ mediũ ſecatę inuicẽ. a. g. & . d. e. oportet vtiq; circa vtrãq; ipſarũ diametrũ deſcribere cõtrapoſitas, vt ſit. a. g. & . d. e. Cõiunctę in ipſis & . d. e. quę poterit id quod ſpecies earũ que eſt circa. a. g. & . a. g. id quod ſpecies earũ que ſunt circa. d. e. ſit quod fit ex. d. e. equale ei quod eſt ſub. a. g. l. Sit aũt. g. l. ad rectos. g. a. & ex duabus datis lineis ad rectos inuicẽ. a. g. & . g. l. deſcribãtur cõtrapoſitę. z. a. h. & . t. g. c. quarũ diameter quidẽ erit trãſuerſa. g. a. recta ãt. g. l. ductęq; a ſectionibus ad. a. g. applicabũtur in ãgulo datę erit aũt. d. e. ſecũda diameter cõtrapoſitarũ, mediã. o. rationem habet ſpeciei latus, & ordinate applicata exiſtẽs ꝑ mediũ ſecata eſt ad. b. Sit rurſus quod eſt ſub. e. d. z. equale ei quod fit ex. a. g. ad rectos aũt ſit. d. z. l. d. e. & ex duabus datis lineis ad rectos inuicẽ poſitis. e. d. & . d. z. deſcribãtur cõtrapoſitę. m. d. n. & . o. e. z. quarũ diameter quidẽ trãſuerſa. d. e. rectũ ãt ſpeciei latus. d. z. ductęq; a ſectionibus, applicabũtur ad. d. e. in ãgulo dato. Erit vtiq; & . m. d. n. & . x. e. o. ſecũda diameter. a. g. quare. a. g. lineas equidiſtãtes. e. g. inter ſectiones. z. a. h. t. & . g. c. per medium ſecat & . d. e. equidiſtantes. a. g. quod oportebat facere, Vocetur autem tales ſectiones coniunctę.

℞ 36863 p̄ ℞ quadra 16 ℞ Cuba 64 m̄ ℞ 8018 p̄ 16



℞ 419 p̄ ℞ 616 ℞ Cronica 493 p̄ ℞ 512

Explicit Liber Primus.

INCIPIT LIBER SECVNDVS APOLLONII CONICORVM.

Apollonius Eudemo, S.D.

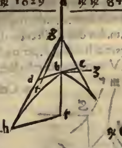
SI vales bene ſe habet, & ipſe mediocriter me habeo. Apollonium filium meum miſi ad te ferrentem tibi ſecũdum librum compoſitorum a nobis conicorum per curre igitur ipſum diligenter, & talium dignis participare, trade, Et Philenides Geometra, quem Comendaui tibi in Epheſo, Si iuenias in locis ad Pergamum, da to ipſi, & tui cura vt valeas. Vale.

Propoſitio, Prima.

SI hyperbolem ad ſumitatem linea tangat, & ab ipſa in vtranq; diametri relicta ſit equalis potenti quartam ſpeciei & a centro ſectionis ad relictos terminos tan gentis, ductę lineę non coincident ſectioni.

Sit hyperbole, cuius diameter, a.b. centrum autem. g. recta autem. b.z. & tangat. d.e. ſectionē a d.b. & quartæ parti ſpeciei eius que eſt ſub. a.b.z. eq̃le ſit quod fit ab vtraq; b.d. & b.e. & coniungantur. g.d. & g.e. & producãtur. Dico q; nõ coincidet ſectiõi, Si n. poſſibile coicidat. g.d. ſectioni ad. h. & ab. h. ordinate applicet. h.t. eq̃diſtãs igit̃ eſt. d.b. q̃n igitur eſt vt. a.b. ad. b.z. qđ fit ex. a.b. ad id quod eſt ſub. a.b.z. Sed eius qđ fit ex. a.b. quarta pars eſt id qđ fit ex. b.g. Eius vero qđ eſt ſub. a.b.z. quarta pars eſt quod fit ex. g.t. ad id quod ex. t.h. eſt aũt & vt. a.b. ad. b.z. qđ eſt ſub. a.t.b. ad id quod fit ex. t.h. Vt igit̃ quod fit ex. g.t. ad. id qđ fit ex. t.h. quod eſt ſub. a.t.b. ad id qđ eſt ſub. t.h. equale igitur quod eſt ſub. a.t.b. ei quod fit ex. g.t. quod eſt abſurdum, non igi tur. g.d. coincidit ſectioni ſimiliter vtiq; demõſtrabimus q; neq; g.e, igitur non ſunt tangentes ſectionem. g.d. & g.e.

℈ p̃ ℞ Cuba 8943 m̃ ℞ 1029 ℞ ℞ 841 p̃ ℈ m̃ ℞ 14891 B p̃ 14/81



℈ ℈ m̃ ℞ ℞ 4913 p̃ 41/81 ℞ Cubica quadrata 4096 p̃ 46/65

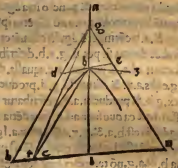
Propoſitio, Secunda.

IIſdem ſtãtibus demonſtrãdũ q; alia nõ tangẽs eſt ſecãs cõtentũ angulũ ſub. d,g, e. ſi n. poſſibile, ſit. g.t. & per. b. ducat̃. b.t. eq̃diſtãs. g.d. & coicidat. g.t. ad. b, & ponat̃. d.h. equalis. b.t. & cõiuncta. h.t. producat̃ ad. e.l.m. q̃n igitur. b.t. & d.

h.equales ſunt & eqdiſtátes &.d.b.&.h.t equales ſunt & eqdiſtátes & qm̃.a.b.in duo ſecat́ ad.g. & adiacet ipſiquedã.b.l. Quod eſt ſub.a.l.b.cũ eo qđ fit ex.g.b.equale eſt ei quod fit ex.g.l.ſimiliter qm̃.h.m.eqdiſtãs eſt.d.e.& eſt.d.b.eq̃lis.b.e.Igit́ &.h.l.equalis.l.m.& qm̃ eſt.h.t.eq̃lis.d.b.Igitur.h.c.maior eſt.d.b.eſt át &.c.m.maior.b.e.ideſt eo qđ fit ex.b.d.qñ igitur eſt vt.a.b.ad.b.z.quod fit ex.g.b.ad id qđ fit ex.b.d. Sed vt.a.b.ad.b.z.qđ eſt ſub.a.l.b.ad id quod fit ex.l.h.& vt igit́ quod fit ex.g.b.ad id quod fit ex.b.d.qđ eſt ſub.a.l.b.ad id quod ex.l.c.vt át quod fit ex.g.b.ad id quod fit ex.b.d.Id qđ fit ex.g.l.ad id quod fit ex.l.h.& vt igit́ qđ fit ex.g.l.ad id quod fit ex.l.h.quod eſt ſub.a.l.b.ad id qđ fit ex.l.c.qñ igitur vt totũ id quod fit ex.l.g.ad totũ id quod fit ex.l.h.ſit ablatũ id quod eſt ſub.a.l.b.ad ablatum quod fit ex.l.c.& reliquũ igitur quod fit ex.g.b.ad reliquũ id quod eſt ſub.m.c.h.eſt vt quod fit ex.g.l.ad id qđ fit ex.l.h.ideſt qđ fit ex.g.b.ad id qđ fit ex.d.b.eq̃le igit́ quod fit ex.d.b.ei quod eſt ſub.m.c.h.qđ eſt abſurdũ,maior.n.ipſo demſatũ eſt,igit́.g.t.nõ tãgẽs eſt ſectionẽ.

℞ ℞ 4983 p̄ ℞ quadra 1024 ℞ ℞ Cubica quadrata 512

℞ prolata 12516



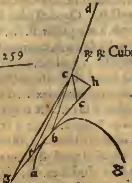
℞ ſciolta 1388 p̄ 4

ℂPropoſitio, Tertia.

SI hyperbolẽ linea tãget coincidet vtriq; earũ que nõ tãgũt & in duo ſecabitur ad tactum, & tetragonũ ab vtraq; ſectionũ ipſius eq̃le erit quartę parti factę ſpeciei ad ductam diametrum p tactum.

ℂSit hyperbole.a.b.g.cẽtrũ aũt ipſius.e.& nõ tãgens.z.e.&.e.h.& tãgat.t.c.ipſam ad b.Dico q; producta.t.c.coicidet.z.e.&.e.h.Si.n.poſſibile nõ coicidat & cõiuncta.e.b.producat́ & ponat́.e.d.eq̃lis.e.b.diameter igitur eſt.b.d.& ponat́ quartę parti ad.b.d.equale id qđ fit ab vtraq;.b.t.&.b.c.& cõiungat́.e.t.&.e.c.nõ igitur tãgẽtes ſunt,qđ eſt abſurdũ,ſubiiciũtur.n.z.e.&.e.h.nõ tangẽtes,Igitur.c.t.producta coicidet.e.z.&.e.h.nõ tangẽtibus ad.z.h.Dico vtiq; & id qđ fit ab.b.z.&.b.h.eq̃le eſt quartę parti ſpeciei ad.b.d.nõ.n.ſed ſi poſſibile,ſit quartę parti ſpeciei eq̃le q; ab vtraq;.b.t.&.b.c.quod igit́ ab vtraq;.z.b.&.b.h.equale.nõ tangẽtes igitur ſunt.t.e.&.e.c.quod eſt abſurdũ qđ igitur ab vtraq;.z.b.&.b.h.equale erit quartę parti ſpeciei ad.b.d.

℞ p̄ ℞ 8888 m̄ ℞ quadra 259 ℞ ℞ Cubica quadrata 12593 p̄ $\frac{41}{81}$

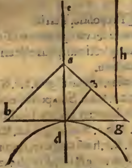


℞ 43 p̄ ℞ ℞ 5813 ℞ 15 p̄ ℞ 43 m̄ ℞ p̄ ℞ 448

ℂPropoſitio,Quarta.

Dvabus datis lineis ãgulũ cõtinẽtibus & puncto itra ãgulũ,deſcribere p pũctum Coni ſectionẽ vocatã hyperbolẽ,quare nõ tãgẽtes ipſas eſſe datas lineas.

ℂSint duo lineę.a.g.&.a.b.cõtingẽtẽ ãgulũ cõtinẽtes eũ qui eſt ad.a. & datũ ſit quodã punctũ quod ſit.d.& decens ſit per.d./g.a.b. deſcribere in nõ tãgetes hyperbolẽ,cõiugat.a.d.& producatur ad.e.& ponatur.a.e.equalis.d.a.& per.d.ducat.d.z. equalis.a.b.& ponatur.z.g.eq̃lis.a.z.& cõiuncta.g.d.producat ad.b.& fiat quod eſt ſub.d.e.h.equale ei qđ fit ex.g.b.& producta.a.d.deſcribatur circa ipſam per.d.hyperbole, quare ductas poſſe id qđ ea que ſunt ad.h.excedẽtia ſpecie ſimili ei quod eſt ſub.d.e.h.qñ igitur.d.z.eq̃diſtãs eſt.b.a.&.g.z.eq̃lis eſt.z.a.Igitur &.g.d.equalis.d.b.quare qđ fit ex.g.b.quadruplũ eſt ei quod fit ex.g.d.& eſt quod fit ex.g.b.equale ei quod eſt ſub.d.e.z.Igitur.a.b.&.a.g.nõ tangẽtes ſunt deſcriptã hyperbolem.

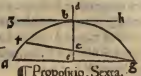


ℂPropoſitio,Quinta.

SI paraboles vel hyperboles diameter lineã quãdã ſecet in duo vel ad diametrum attingens ſectionem equidiſtãs erit in duo ſecanti linee.

¶ Sit parabole vel hyperbole.a.b.g.cuius diameter.d.b.e.& tãgat ſectionem.z.b.h.ducatur aũt quædam linea in ſectione que ſit.a.e.g.faciẽs.a.e.equalem.e.g. Dico ꝙ.a.g.eqdiſtãs eſt.z.h.ſi.n.nõ,ducať p.g./g.t.equidiſtãs.z.h.& cõiungať.t.a.qñ igiť parabole eſt vel hyperbole.a.b.g.cuius diameter.d.e.tãgẽs aũt.z.h.& eqdiſtãs ipſi.g.t.equalis eſt.g.c./c.t.ſed &.g.e./e.a.Igiť.a.e.equidiſtans eſt.c.e.qď eſt impoſſibile,coincidit n.producta ad.b.d.

℞ quadra 1281 p̃ 48 ℞ quadra 225 m̃ ℞ 488



¶ Propoſitio, Sexta.

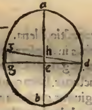
SI defectionis vel circuli circunferentię diameter lineam quandã in duo ſecet non per centrum exiſtentem,quæ ad extremum diametri tangit ſectionem equidiſtans erit in duo ſecanti lineę

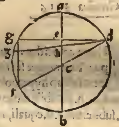
¶ Sit defectio vel circuli circunferentia,cuius diameter.a.b.&.a.b.ſecet in duo.g.d.nõ per centrũ exiſtentẽ ad.e.Dico ꝙ que eſt ad.a.tangẽs ſectionẽ equidiſtãs eſt.g.d.nõ.n.Sed ſi poſſibile ſit.d.z.eqdiſtãs tangẽti ad.a.igiť.d.h.equalis eſt.z.h.eſt aũt &.d.e./e.g.igitur.g.z.equidiſtãs eſt.h.e.qď eſt abſurdũ,Siue.n.punctũ.h.cẽtrũ ſit.a.b.ſectionis.g.z.coincidet.a.b.ſiue non eſt ſupponatur.c.& coniuncta.d.c.producatur ad.h.& coniũgatur.g.t.quãdo igitur.d.c.equalis eſt.c.t.eſt autẽ &.d.c./c.g.eqdiſtans igitur eſt.g.t./a.b.ſed &.g.z.quod eſt abſurdum quare ad.a.tangens equidiſtans eſt.g.d.

℞ ℞ Cuba 512 m̃ ℞ 48

℞ ſorda 383 p̃ 4863

8613

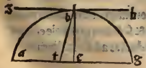




¶ Propoſitio,Septima.

SI Coni ſectionem vel circuli circunferentiam linea tangat,& huic equidiſtans ducatur in ſectione & in duo ſecetur,cõiuncta linea a tactu ad ſectionẽ in duo diameter erit ſectionis.

¶ Sit Coni ſectio vel circuli circũferẽtia.a.b.g.tãgẽs aũt ipſam.z.h.&.a.g.equidiſtãs.z.h.& in duo ſecetur ad.e.& cõiungatur.b.e.Dico ꝙ.b.e.diameter eſt ſectiõis,nõ.n.Sed ſi poſſibile,ſit diameter ſectionis.b.t.Igitur.a.t.eq̃lis eſt.t.g.qď eſt abſurdũ,nã.a.e.eſt eq̃lis.e.g.nõ igiť.b.t.diameter erit ſectiõis,ſimiliter vtiq; demõſtrabimus ꝙ neq; alia quedam preter.b.e.



9 p̃ ℞ 512 m̃ 8 p̃ ℞ ℞ 4096 b̃.15

℞ ℞ 64963 m̃ ℞ 13816 p̃ 45/105

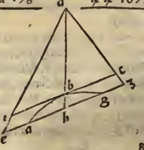
f iii

ℂPropoſitio, Octaua.

SI hyperbole linea coincidat ad duo puncta producta, in vtranq; coincidet non tangentibus & receptę ab ipſis ſub ſectione ad non tangentes, & receptę ab ipſis ſub ſectione ad non tangentes equales erunt.

ℂSit hyperbole.a.b.g.non tangentes autem ſunt.e.d.&.d.z.&.a.g. coincidat.a b.g. Dico q; in vtranq; coincidet non tangentibus. ſecetur.a.g. in duo ad.h.& coniungatur d.h. diameter igitur eſt ſectionis, Igitur tangens ad.b.equidiſtās eſt.a.g. ſit igitur tangens.t.b.c. coincidet igitur.e.d.&.d.z. quando igitur.d.a. equidiſtans eſt.c.t.&.c.t. coincidit.d.a.&.d.t.&.a.g.igitur coīcidet.d.e.&.d.z.coīcidat ad.e.z.& eſt.t.b.equalis.b.c.Igitur &.z.h.equalis.h.e. quare &.g.z./a.e.

℞ ℞ 14993 p̃ ℞ quadra 196 ℞ ℞ 4098 p̃ ℞ 14616 m̃ 8

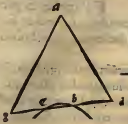


℞ Cronica 3616 ℞ ligata 3661 p̃ ℞ 512

ℂPropoſitio, Nona.

SI linea coincidens non tangētibus in duo ſecetur ſub hyperbole ad vnum ſolum punctum tanget ſectionē, linea.n.g.d.coincidens. g.a.d.non tangētibus in duo ſecata eſt ab hyperbole ad punctum.e. Dico q; ad aliud punctum non tanget ſectionē.Si.n.poſſibile tangat ad.b.igitur.g.e.equalis eſt.b.d.quod eſt abſurdum, nam g.e.ſubiicitur.e.d.equali, non igitur ad aliud punctum tanget ſectionem.

℞ ℞ 4893 p̃ ℞ cuba 512 ℞ 8649 p̃ ℞ 4096

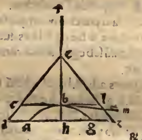


ℂPropoſitio, Decima.

SI linea quedam tangens ſectionem cointidat vtriq; non tangentium, Contentum rectangulum ſub receptis lineis inter non tangentes & ſectionem equale eſt quartæ parti factæ ſpeciei ad diametrū in duo diuidentē ductas ad ductā lineam.

¶Sit hyperbole.a.b.g.non tangentes autem ipſam.d.e.&.e.z.& ducatur.d.z.ſecans ſectionem & non tangentes ipſam.d.e.&.e.z.& ducatur.d.z.ſecans ſectionẽ & ſecetur a.g.in duo ad.h.& coniungatur.h.e.& ponatur.e.t.equalis.b.e.& ducatur a puncto b./b.m.ad rectos.t.e.& fiat vt quod eſt ſub.t.h.b.ad id quod fit ex.a.h./t.b.ad.b.m. Diameter igitur eſt.b.t.recta autem.b.m.Dico ꝙ quod eſt ſub.d.a.z.equale eſt quartæ parti eius quod eſt ſub.t.b.m.ſimiliter & quod eſt ſub.d.g.z.ducatur.n.per.b./.c.l. tangens ſectionem equidiſtans igitur eſt.d.z.& quoniam demonſtratum eſt vt.t.b.ad b.m.quod fit ex.e.b.ad id quod fit ex.b.c.idem quod fit ex.e.h.ad id quod fit ex.h.d. vt autem.t.b.ad.b.m.quod eſt ſub.t.h.b.ad id quod fit ex.h.a.quando igitur eſt vt totum quod fit ex.e.h.ad totum quod fit ex.d.h.ſic ablatum quod eſt ſub.t.h.b.ad ablatum quod fit ex.a.h.& reliquum igitur quod fit ex.e.b.ad reliquum quod eſt ſub.d.a.z./vt quod fit ex.e.h.ad id quod fit ex.h.d.idem quod fit ex.e.b.ad id quod fit ex.b.c. equale igitur quod eſt ſub.z.a.d.ad id quod fit ex.b.c.ſimiliter vtiq; demõſtrabitur & quod eſt ſub.d.g.z.ei quod fit ex.b.l.equale autẽ quod fit ex.e.b.ei qđ fit ex.b.l.equale igitur & quod eſt ſub.z.a.d.ei quod eſt ſub.z.g.d.

℞ ℞ 516 m̃ ℞ quadra 4096 ℞ ℞ Cubica quadrata 8986 p̃ $\frac{141}{256}$



℞ quadra 324 p̃ ℞
Cuba 1024 p̃ 16

℞ ℞ Cronica ligata 13993

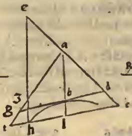
¶Propoſitio, Vndecima.

SI vtrinq; Continentium angulum qui eſt inter continentem hyperbolem ſecet quedam linea coincidet ſectioni ad vnum ſolum punctum, & contentum ſub receptis lineis inter continentem & ſectionem equale erit quartę parti eius quod fit ex ducta diametro ad ſecantem lineam.

¶Sit hyperbole cuius non tangẽtes.g.a.&.g.d.& producatur.a.d.ad.e.& per pũctum e.ducatur.e.z.ſecans.e.a.&.a.g.manifeſtum igitur ꝙ coincidit ſectioni ad vnum ſolum punctum,que.n.per.a.ducitur.e.z.equidiſtans,vt.a.b.ſecabit angulũ,qui eſt ſub g.a.d.& coincidet ſectioni & diameter eius erit,Igitur.e.z.coincidet ſectioni ad vnũ ſolum punctum,coincidat ad.h.Dico ꝙ & id quod eſt ſub.e.h.z.equale eſt quod fit ex a.b.ducatur.n.per.h.ordinate.t.h.&.l.e.igitur per.b.tangens equidiſtans eſt.h.t. ſit.g.d.quando igitur.g.b.equalis eſt.b.d.quod igitur fit ex.b.g.idẽ quod eſt ſub.g. b.d.ad id quod fit ex.b.a.rationem habet compoſitam ex ratione.b.g.ad.b.a.& ratiõe

d.b.a d.b.a.Sed vt.b.g.ad.b.a.t.h.ad.z.h.vt autem.d.b.ad.b.a./b.c.ad.h.e.ratio igitur eius quod fit ex.g.b.ad id quod fit ex.b.a.cōponitur ex ratione.t h.ad.h.z.& ratione.c.h.ad.h.e.Sed ratio eius quod eſt ſub.c.h.t.ad id quod eſt ſub.e.h.z.cōponitur ex eiſdē,vt igitur quod eſt ſub.c.h.t.ad id qđ eſt ſub.e.h.z /quod fit ex.g.b.ad id quod fit ex.b.a.viciſſim vt quod eſt ſub.c.h.t.ad id quod fit ex.g b.quod fit ex.e.h.z.ad id quod fit ex.a.b.equale autem quod eſt ſub.c.h.t.ei quod fit ex.g.b.eſſe demonſtratum eſt,equale igitur & quod eſt ſub.e.h.z.ei quod fit ex.a.b.

℞ ℞ quadra 7788 p̃ ℞ 512



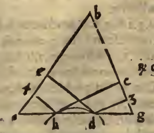
℞ ℞ 400683 p̃ ℞ 4096

ℂPropoſitio,Duodecima.

SI ad non tangentes a quodam puncto eorum quę ſunt in ſectione duo lineę ducātur in cōtingētibus angulis, & his eqdiſtātes ducātur a quodā puncto eorum que ſunt in ſectiōe,rectāgulū ſub eqdiſtātibus cōtentū eq̄le erit contēto ſub his, quibus equidiſtātes ductę ſunt.

ℂSit hyperbole, cuius non tāgentes.a.b.&.b.g.& relictū ſit quodā punctū in ſectione quod ſit.d.& ab ipſo ad.a.b.&.b.g.ducātur.d e.&.d.z.relictū aūt ſit alterū punctum in ſectiōe,qđ ſit.h.& per.h.ducātur.h.t.&.h.c.eqdiſtātes.e.d.&.d.z.Dico q̄ eq̄le eſt quod eſt ſub.e.d.z.ei quod eſt ſub.t.h.c.cōiungātur.n.d.h.& producātur ad.a.&.g. qm̄ igitur equale eſt quod eſt ſub.a.d g.ei qđ eſt ſub.a.h.g.eſt igit̄ vt.a.h.ad.a.d./d.g.ad.g.h.Sed vt.a.h.ad.a.d./h.t.ad.e.d.vt aūt.g.d ad.g.h./d.z.ad.h.c.vt igitur.t.h.ad.d.e./d.z.ad.h.c,equale igitur eſt quod eſt ſub.e.d.z.ei quod eſt ſub.t.h.c.

℞ 1029 m̃ ℞ 6216



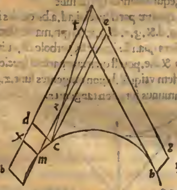
℞ cuba 9616 p̃ ℞ 43888 p̃ 14/16

¶ Propoſitio, Decimatertia.

SI in ſegregato loco ſub tangētibus & ſectiōe equidiſtās ducta ſit quedā linea alteri nō tangētiū coincidet ſectioni ad vnū ſolum punctum.

¶ Sit hyperbole, cuius non tangētes.g.a.&.a.b.& relictū ſit quodā punctū qđ ſit.e.& per ipſum ducatur.e.z.equidiſtās.a.b.dico ꝙ coincidet ſectiōi, Si.n.poſſibile. nō coincidat & relictū ſit quodā punctū in ſectione quod ſit.h.& per.h.ad.g.a.&.a.b. ducātur.h.g.&.h.t.& quod eſt ſub.g.h.t.equale ſit quod eſt ſub.a.e.z.& cōiungatur.a.z.& producať coincidet ſectioni coincidat ad.c.& per.c.ad.g.a.&.b.a.ducantur.c.l.&.c.d.quod igitur eſt ſub.g.h.t.equale eſt ei quod eſt ſub.l.c.d.ſubiicitur autem & ei quod eſt ſub.a.e.z.equale, quod igitur eſt ſub.l.c.d.ideſt quod eſt ſub.c.l.a.equale eſt ei quod eſt ſub.a.e.z.quod eſt impoſſibile.nā.c.l.maior eſt.e.z.&.l.a./a.e. Coincidit igitur.e.z.ſectioni: Coincidat ad.m. Dico ꝙ ad aliud nō coīcidit, ſi.n.poſſibile coincidat ad.n.& per.m.n.ducātur.m.x.&.n.b.equidiſtātes.g.a.quod igitur eſt ſub.e.m.x.equale eſt ei quod eſt ſub.e.n.b.quod eſt impoſſibile non igitur ad alterum punctum coincidit ſectioni.

℞ ligata 4096 p̄ ℞ 512 a ℞ ℞ 8888 p̄ ℞ ligata 3681



℞ quadra 225 ℞ Cronica 12500 f̄ 61/104

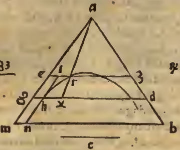
¶ Propoſitio, Decimaquarta.

NOn tangētes & ſectio in infinitum pertractę propiuſꝗ ſibiipſis adducunt, & omni dato ſpatio ad minus proueniūt ſpatium.

¶ Sit hyperbole, cuius nō tangentes.a.b.&.a.g.datum autē ſpatium.c. Dico ꝙ.a.b.&.a.g.& ſectio productę, propiuſꝗ ſibiipſis adducunt & ad minus peruenient ſpatium. Ducantur.n.tangenti equidiſtātes.e.t.z.&.g.h.d.& cōiungatur.a.t.& producatur ad.x.quando igitur quod eſt ſub.g.h.d.equale eſt ei quod eſt ſub.z.t.e.eſt igiť vt.d.h.ad.z.t./t.e.ad.g.h.maior autem.d.h./z.t.maior igitur &.e.t./g.h.ſimiliter demonſtrabimus ꝙ & que ſunt ad extra minores ſunt, relinquatur.c.l.minor ſpatio.c. & per.l.ducatur.l.n.equidiſtans.a.g.coincidat igitur ſectioni, coincidat ad.n.& per n.ducatur.n.m.b.equidiſtans.e.z.Igitur.m.n.equalis eſt.e.l.& propter hoc minor.c,

Ex hoc vtiq; manifeſtũ q̃ omniũ non tãgentiũ ſectioni propius ſunt.a.b.&.a.g.& ſub b.a.g. cõtẽtus ãgulus minor eſt vtiq; cõtẽta ſub altera non tangẽtium ſectioni.

℞ ℞ 2516 p̄ ℞ cuba 2183



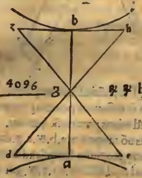
℞ quadra 225 m̃ ℞ 324

ℭPropoſitio,Decimaquinta.

Contrapoſitarum ſectionum Communes ſunt non tangentes.

ℭSint contrapoſitæ ſectiones,quarum diameter.a.b. centrum.g.Dico q̃.a.& b.ſectionum communes ſunt non tangentes,ducantur per puncta.a.&.b./d.a.e.&.z.b.h.tangentes ſectiones,equidiſtantes igitur ſunt ſingula.d.a.&.a.e.&.z.b.&.b.h.equum potens quartæ parti ſpeciei ad.a.b.equales igitur.d.a.&.a.e.&.z.b.&.b.h.& coniungantur.g.d.&.g.e.&.g.z.&.g.h.manifeſtum q̃.d.g.in linea eſt g.h &.g.e./g.z.per equidiſtãtes quando igitur hyperbole eſt, cuius diameter.a.b.tangens autem.d.e.& vtraq;.d.a.&.a.e.poteſt quartam partem ſpeciei ad.a.b.non tãgentes.n.ſunt.d.g.&.g.e.per eadem vtiq; &.b.non tangentes ſunt.z.g.&.g.h.contrapoſitarum igitur ſectionum communes ſunt non tangentes.

℞ ℞ prolata 2024 p̄ ℞ 4096



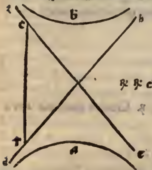
℞ ℞ ligata 384 m̃ ℞ 883

ℭPropoſitio,Decimaſexta.

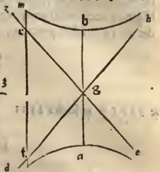
Si ad contrapoſitas ducta ſit quedam linea ſecans vtranq; continentium angulum continentium ſectiones coincidet vtriq; contrapoſitarũ ad vnum ſolum punctum & receptæ ab ipſa ſub ſectionibus ad nõ tangentes equales erunt.

ℭSint enim contrapoſitæ.a.&.b.quarum centrũ quidem.g.non tangentes aũt.d.g.h.

&.c.z.& ducatur quedam linea ſecans vtráq;.d.g.&.g.z.que ſit.t c. Dico q̃ producta coicidet vtriq; ſectionũ,ad vnũ punctũ ſolum,qñ enim.a.ſectionẽ non tãgentes ſunt.d.g.& g.e.& ducta eſt quedã linea.t.c.ſecãs vtráq; cõtinẽtium angulũ qui eſt ſub.d.g.z.Igitur.c.t.producta coicidet ſectioni.a.ſimiliter ãt coicidet &.b.ad.l m.ducat̃ per.g./a.b.eq̃diſtãs.l.m.eq̃le igit̃ eſt qđ eſt ſub.c.l.t.ei q̃ fit ex.a.g.qđ autẽ eſt ſub t.m.c.ei q̃ fit ex.g.b.quare & qđ eſt ſub.c.l.t.ei q̃ eſt ſub.t.m.c.eſt &.l.t.equale.c.m.



℞ ℞ cubica quadrata 8983

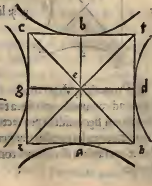


Propoſitio,Decimaſeptima.

Contrapoſitarum ad cõiunctionẽ,Communes ſunt non tangentes.

Sint Coniunctę contrapoſitę quarũ diametri coniuncti.a.b.&.g.d.cẽtrum autem.e.Dico q̃ cõmunes ipſarum ſunt non tangentes,ducantur.n.tangẽtes ſectiones per.a,&.b.&.h.&.d.puncta.que ſint.z.a.h.&.h.d.t.&.t.b.m.&.c.g.z.parallelogramum igitur eſt.z.h.t.c.coniungantur igitur.z.e.t.&.c.e.h.lineę igitur ſunt & diametri parallelogrami & in duo ſecãtur omnes ad punctum.e.& qm̃ ſpecies que eſt ad.a.b.equalis eſt quadrato quod fit ex.g.d.eſt autem.g.e.equalis.e.d.ſingulũ igitur eorum que fiunt ex.z.a.&.a.h.&.c.b.&.b.t,quarta pars eſt ſpeciei ad.a.b.igitur.z.e.t.&.c.e.z.non tangentes ſunt ſectiones.a.&.b.ſimiliter vtiq; demonſtrabimus q̃ &.g.&.d.ſectiones eędem ſunt non tangentes, Contrapoſitarum igitur ad coniunctionem Communes ſunt non tangentes.

℞ ℞ ligata 13913 p̄ ℞ 108



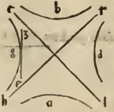
℞ ligata 4c96 p̄ ℞ 684

¶Propoſitio, Decimaoctaua.

SI vni ad cõiunctionẽ contrapoſitarũ coincidẽs linea producta in vtrãqꝫ extra cadet ſectionem coincidet vtriqꝫ deinceps ſectionũ ad vnum ſolũ punctum.

¶Sint ad coniunctionẽ contrapoſitę ſectiones.a.&.b.&.g.&.d.& quedã linea e.z.coincidat.g.& producta in vtranqꝫ extra ſectionem cadet. Dico ꝙ coincidet vtriqꝫ ſectionum.a.&.b.ad vnum ſolum punctum, Sint.n.non tangentes ſectiones.h.t.&.c.l, Igitur.e.z.coincidit vtriqꝫ.h.t.&.c.l.manifeſtum igitur ꝙ & ſectionibus.a.b.coincidet ad vnum ſolum punctum.

℞ ℞ 5555 p̃ ℞ ſciolta 3333



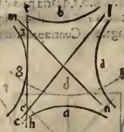
℞ Cronica quadrata 2924

¶Propoſitio, Decimanona.

SI ad coniunctionem contrapoſitarum ducatur quedam linea attingẽs, Cuius contigit ſectionũ, Coicidet ſectiõibus deinceps & in duo ſecabitur ad tactũ.

¶Sint ad coniunctionem contrapoſitæ.a.b.&.g.d.& quedam linea.e.z.tangat g. Dico ꝙ producta coincidet ſectionibus.a.b.& in duo ſecabitur ad.g.manifeſtum igitur ꝙ coincidet.a.&.b.coincidat vſqꝫ ad.c.&.t. Dico ꝙ.g.h.equalis eſt.g.t.ducantur.n./c.l.&.m.n.non tangentes ſectiones. Igitur.e.h.equalis.z.t.&.g.e./g.z.& tota g.h.eſt equalis.g.t.

℞ Cuba 64 m̃ ℥ p̃ ℞ 45 8



℞ ℞ ligata 4863 p̃ ℞ 16513 p̃ 8

¶Propoſitio, Vigeſima.

SI vnam contrapoſitarum ad coniunctionem linea tangat, & per centrũ ipſarum ducantur duo lineæ quarum hęc quidem per tactum, Illa vero ad tangentem vſqꝫ quo coincidat vni deinceps ſectionum, tangens ſectionem ad coincidentem linea equidiſtãs erit ductæ per tactum & centrum coniunctæ per tactus & cẽtrum erunt diametri contrapoſitarum.

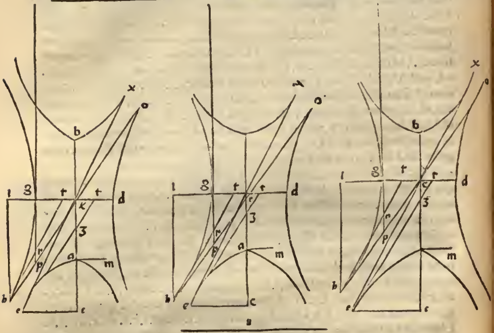
¶Sint

PROPOSITIO XX.

¶Sint ad coniunctionem cõtrapoſitæ, quarum diametri coniunctæ.a.b.&.g.d.centrum autem.e. & ſectionem.a.d.tangens ducatur.e.z. & producta coincidat.g.e.ad.g.& coniungatur.c.e.& producatur ad.x.& per.e.ducatur.e.h.ducatur equidiſtans.e.z. & per.h.tangens ſectionem ducatur.t.h.dico quod.t.h.equidiſtans eſt.c.e.& h.o./e.x.coniunctæ ſunt diametri.ducantur.n.ordinate.c.c.&.h.l.&.g.r.p. Ad quas autem poſſunt applicatæ. Sint.a.m.&.g.n.qñ igitur eſt ut.b.a.ad.a.m./n.g.ad.g.d. Sed ut.b.a.ad.a.m. quod eſt ſub.e.c.z.ad id quod fit ex.c.e.ut autem.n.g.ad.g.d.quod fit ex.h.l.ad id quod eſt ſub.e.l.t.& ut igitur quod eſt ſub.e.c.z.ad id quod fit ex.c.c quod fit ex.h.l.ad id qđ eſt ſub.e.l.t.Sed quod eſt ſub.e.c.z.ad id quod fit ex.c.e.Compoſitam habet rationem ex ratione.e.c.ad.c.e.& ex ratione.z.c.ad.c.e.quod autem fit ex.h.l.ad id quod eſt ſub.e.l.t. Compoſitam habet rationem ex ea quam habet.h.l.ad.l.e.&.h.l.ad.l.t. Igitur Compoſita ratio ex ratione.e.c.ad.a.e.&.z.c.ad.c.e.eadem eſt Compoſitæ rationi ex ratione.e.l.ad.l.e.& ratione.h.l.ad.l.t.quarum ratio z.c.ad.c.e.eadem eſt rationi.h.l.ad.l.e.ſingula autem.e.c.&.c.z.&.z.e. Singula.e.l.&.l.h.&.h.e.eq̄diſtãs eſt, reliqua igitur ratio.e.c.ad.c.e.eadẽ eſt rationi.h.l.ad.l.t.& circa eq̄les ãgulos qui a d.e.l.ꝓportionalia ſunt latera. Similis igiť eſt.e.c.e.triangulus.h.t.l.& eq̄les habebit ãgulos, ſub quibus eiuſdẽ rationis latera eq̄lis igiť eſt qui eſt ſub.e.e.c.ei qui eſt ſub.l.h.t.eſt autem & totus qui eſt ſub.c.e.h.ei qui eſt ſub.l.h.e.equalis, & reliquus igitur qui eſt ſub.e.e.h.ei qui eſt ſub.t.h.e.eſt equalis, igitur.e.c.equidiſtans eſt.h.t./fiat utique ut.p.h.ad.h.r.ſic.t.h.ad.s.Igitur.s.dimidia eſt eius ad quam poſſunt ductæ ad diametrum.h.o.in ſectionibus.g.&d.& quoniã ſectionũ.a.&.b.eſt.g.d.ſecũda diameter & coicidit ipſi.e.t.qđ igitur eſt ſub.t.e.&.e.c.equale eſt ei quod fit ex.g.c. Si.n.ab.c.eq̄diſtantem lineæ.c.e.ducamus quod eſt ſub.t.e.& recepta ſub equidiſtanti equale, erit quod fit ex.g.e.propter hoc autem eſt ut.t.e.ad.e.c.quod fit ex.t.e.ad id quod fit ex.e.g. Sed ut.t.e.ad.e.c./t.z.ad.z.e.ideſt triangulus.t.c.z.ad.e.z.e ut autem quod fit ex.t.e.ad id quod fit ex.e.g.triangulus.e.t.z.ad.e.g.p. ideſt ad.h.t.e.ut igitur.t.e.z.ad.e.z.e./t.z.e.ad.e.h.l.Igitur.h.t.e.triangulus.e.e.z.habet autem & angulum qui eſt ſub.t.h.e.equalem angulo.e.e.z.igitur.e.e.equidiſtans eſt.h.t.&.e.z./h.e. igitur latera quæ ſunt circa equales angulos. Eſt igitur vt.h.t.ad.e.e./e.z.ad.h.e.equale igitur eſt quod eſt ſub.t.h.e.ei qui eſt ſub.e.e.z.& quoniam eſt ut.s.ad.t.h./r.h.ad.h.p. vt autẽ.r.h.ad.h.p./e.e.ad.e.z.equidiſtans.n.Igitur & vt.s.ad.t.h./e.h.ad.e.z.Sed vt s.ad.t.h.accepta.e.h.communi altitudine, quod eſt ſub.s.&.e.h.ad id quod eſt ſub t.h.e.vt autem.e.e.ad.e.z.quod fit ex.e.e.ad id quod eſt ſub.e.e.z.& vt igitur quod eſt ſub.s.&.e.h.ad id quod eſt ſub.t.h.e.quod fit ex.e.e.ad id quod eſt ſub.e.t.z. viciſſim vt quod eſt ſub.s.&.h.e.ad id quod fit ex.e.e.quod eſt ſub.t.h.e.ad id quod eſt ſub.z.e.e.equale autem quod eſt ſub.e.t.h.ei qui eſt ſub.e.h.z.equale igitur & quod eſt ſub.s.&.h.e.ei qui fit ex.e.e.& eſt quod eſt ſub.s.&.h.e.quarta pars ſpecici que eſt ad.h.o.nam.h.e.dimidia eſt.h.o.&.s.dimidia eius ad quam poſſunt: quod autem fit ex.e.e.quarta pars eius quod fit ex.e.x.eſt.n./e.e.equa-

lis.e.x.quod autem fit ex.e.x.equale eſt ſpeciei ad.h.o.ſimiliter vtiq; demonſtrabimus q; &.h.o.poteſt quod ſpecies ad.e.x.Igitur.e.x.&.h.o.coniunctæ ſunt diametri.a.b.&.g.d.contrapoſitarum.

n ℞ 450 m̃ ℞ 4096 p̃ 4 n ℞ cuba 4613 p̃ 483 n ℞ ligata ·686 p̃ 4

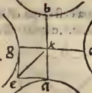


ℭPropoſitio, Vigeſimaprima.

EIſdem ſubiectis demonſtrandum q; contactio tangentium eſt ad vnam non tangentium.

ℭSint ad coniunctionem contrapoſitæ ſectiones quarum diametri.a.b.&.a.d.& tangentes ducantur.a.e.&.e.g.Dico q; punctū.e.ad non tangentes eſt, qm̃.n. quod fit ex.g.e.equale eſt quartę parti ſpeciei ad.a.b.quod autem fit ex.g.e.equale eſt ei qui fit ex.a.e.Igitur & id quod fit ex.a.e.equale eſt quartę parti ſpeciei ad.a.b. quod autem fit ex.g.e.equale eſt ei qui fit ex.a.e.Igitur & quod fit ex.a.e.equale eſt quartæ parti ſpeciei ad.a.b.coniungatur.e.e.non tangens igitur.e.e.igitur punctum e.ad non tangentem eſt.

℞ ℞ 4939 p̄ ℞ 43 m̄ ℞ 86

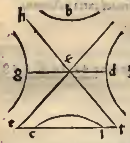


℞ cuba 488 p̄ 224 m̄ 46/81

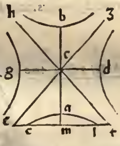
ℭPropoſitio, Vigeſima ſecunda.

SI ad coniunctionem cõtrapoſitis ex centro linea ducatur ad quãdam ſectionum & hæc equidiſtans ducatur coincidens vni deinceps ſectionum & non tangentibus, contentum ſub ſectionibus ductæ factis inter ſectionem & non tangentes equale eſt quadrato quod fit ex centro.

ℭSint ad coniunctionem cõtrapoſitę ſectiones. a. b. & . g. d. non tangentes autem ſectionũ ſint ad. e. e. z. & . e. h. t. & ex centro. e. ducatur quædam linea. e. g. d. & equidiſtans ipſi ducatur. e. r. ſecans deinceps ſectionem & non tangentes. Dico ꝙ id quod eſt ſub e. c. t. equale eſt ei quod fit ex. g. e. ſecetur in duo. c. l. ad. m. & coniuncta. m. e. producatur, diameter igitur eſt. a. b. ſectionum. a. & . b. & quoniam tangens ad. a. equidiſtãs eſt. e. r. Igitur. e. t. ad. a. b. ordinate eſt applicata & . e. centrum. Igitur. a. b. & . g. d. coniunctæ ſunt diametri, quod igitur fit ex. g. e. equale eſt quartæ parti ſpeciei ad. a. b. quartæ vero parti ſpeciei ad. a. b. equale eſt quod eſt ſub. t. c. e. igitur & quod eſt ſub t. c. e. equale eſt ei quod fit ex. g. e.



℞ ℞ 43968 p̄ ℞ 643 m̄ 8

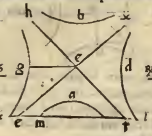


ℭPropoſitio, Vigeſima tertia.

SI in ad coniunctionem cõtrapoſitis ex centro quedam ducatur ad quandam ſectionum, & hæc equidiſtans ducatur coincidens tribus deinceps ſectionibus, contentum ſub ſectionibus ductæ factis inter tres ſectionis duplum erit tetragoni ex ea que ex centro.

ℭSint ad coniunctionem cõtrapoſitæ ſectiones. a. b. & . g. d. centrum autem ſectionum ſit. e. & ex. e. ad quandam coincidat quædam linea. g. e. & ducatur. c. l. equidiſtans lineæ. g. e. ſecans tres deinceps ſectiones. Dico ꝙ id quod eſt ſub. c. l. m. duplum eſt eius quod fit ex. g. e. ducantur non tangentes ſectionum. e. z. & . h. t. quod igitur fit ex. g. e. equale eſt vtriqȝ eorum qui ſunt ſub. t. m. e. & . t. c. e. quod autem eſt

ſub.t.m.e.cum eo qui eſt ſub.t.c.e.equale eſt ei qui eſt ſub.l.m.c.propter q̃ ſumitates equales ſunt, Igitur & quod eſt ſub.l.m.c.duplum eſt eius quod fit ex.g.e.

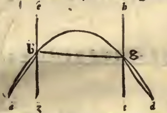


℞ ℞ cubica quadrata 14096 ℞ ℞ ligata 15913 p̃ ℞ 4899

Propoſitio, Vigeſimaquarta.

SI Parabole duo lineæ coincidant vtraq; ad duo puncta neq; alterius ipſarum contactio ſub alterius contactionibus continentur, coincident inuicem lineæ extra ſectionem.

Sit parabole.a.b.g.d.&.a.b.g.d.duo lineæ coincidant que ſint:a.b.&.g.d.neq; alterius ipſarum contactio ſub alterius contactionibus continebitur. Dico q̃ productæ coincident inuicem,ducantur per.b.&.g.diametri ſectionis.e.b.z.&.h g.t.equidiſtantes igitur ſunt & ad vnum ſolum punctum vtraq; ſectionem ſecat, coniungatur vtiq; b.g.Igitur ãguli qui ſunt ſub.e.b.g.&.h.g.b.duobus rectis equales ſunt,&.d.g.&.b.a.productę minores faciũt duobus rectis,coincidẽt igitur inuicẽ extra ſectionem.



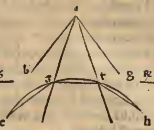
℞ ℞ 143816 p̃ ℞ 400 ℞ cuba 46916 m̃ ℞ 48

Propoſitio, Vigeſimaquinta.

SI hyperbole duo lineę coincidãt vtraq; ad duo puncta,neq; alterius ipſarum contactio ſub alterius cõtactionibus cõtineatur, Coincidẽt inuicem lineæ extra ſectionem,intra angulum vero continentem ſectionem.

Sit hyperbole cuius non tangentes.a.b.&.a.g.& ſecent duo lineę ſectionem.e.z.&.h.t.neq; alterius contactio ſub alterius contactionibus contineatur. Dico q̃.e.z.&.h.t.productę coincident extra ſectionem & intra angulum qui eſt ſub.g a.b. Coniunctæ enim.a.z.&.a.t.producantur & coniungatur.z.t.& quoniam.e.z.&.h.t.productę ſecant angulos qui ſunt ſub.a.z.t.&.a.t.z.ſunt autem dicti anguli minores duobus rectis.e.z.&.h.t.productę coĩcidẽt inuicẽ,extra ſectionẽ qdẽ,intra vero ãgulũ q eſt ſub b.a.g.ſimiliter vtiq; demõſtrabimus & ſi tãgentes ſint ſectiones.e.z.&.h.t.

℞ ℞ 963 p̄ ℞ quadra 256

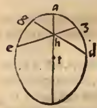


℞ ℞ 449 p̄ ℞ 16815 m̄ 19

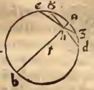
¶Propoſitio, Vigeſimaſexta.

SI defectionem vel circuli circunferentiam duo lineę ſecent inuicem non per centrum exiſtentes non ſecant inuicem in duo.

¶Si.n.poſſibile indefectione vel circuli circunferentia duo lineę.g.d.&.e.z. non per centrũ exiſtẽtes ſecẽtur inuicẽ in duo ad.h.& ſit cẽtrum ſectionis.t.& cõiuncta.h.t.producatur ad.a.b.qñ igitur diameter eſt.a.b.ſecãs in duo.e.z.igitur tangẽs ad.a.equidiſtãs eſt.e.z.ſimiliter vtiq; demonſtrabimus q; & equidiſtãs eſt.g.d.quare &.e.z.equidiſtãs eſt.g.d.qđ eſt impoſſibile,non igitur.g.d.&.t.z.ſecant inuicem.



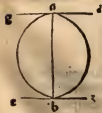
℞ ℞ Cubica quadrata ligata & ſciolta—$\frac{15}{11}$—



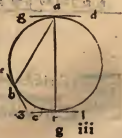
¶Propoſitio, Vigeſimaſeptima.

SI defectionẽ vel circuli circũferẽtiã duo lineę tangãt, Siquidẽ cõiungẽs tactus p cẽtrũ erit,eqdiſtãtes erũt tãgẽtes,ſi aũt nõ,coincidẽt ad eaſdẽ partes cẽtri.

¶Sit defectio vel circuli circũferẽtia.a.b.& tãgat ipsã.g.d.a.&.b.e.z.& cõiungat.a.b.& ſit prius per cẽtrũ.Dico q;.g.d.eqdiſtãs eſt.e.z.qñ eni.a.b.diameter eſt ſectiõis,&.g.d.tãgit ad.a.Igit.g.d.eqdiſtãs eſt applicatis ordinate ad.a.b.propter eadẽ vtiq; &.b.z.eqdiſtãs eſt ipſis igit &.g.d.eqdiſtãs eſt.e.z.nõ veniat.a.b.p cẽtrũ vt ſe habet in ſecũda deſcriptiõe,& ducat diameter.a.t.& p.t.h.t.l.tãgẽs,Igit.e.l.eqdiſtans eſt.g.d.Igit.e.z.pducta coicidet.g.d.ad eaſdẽ ptes cẽtri,in qbus eſt.a.b.



℞ ℞ 15863 m̄ ℞ 8894 p̄ ℞ 48

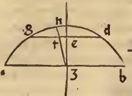


¶ Propoſitio, Vigeſimaoctaua.

SI in Coni ſectione vel circuli circunferentia duas equidiſtantes lineas, linea quæ dam in duo ſecet diameter erit ſectionis.

¶ In ſectione, n, Coni duo lineę equidiſtãtes, a. b. &. g. d. ſecãtur ad. e. z. & con iuncta. e. z. producatur, Dico ꝙ diameter eſt ſectionis, Si. n. non, ſit ſi poſſibile ſit. h. t. z. Igitur tangens ad. h, equidiſtans eſt. a. b. quare eadem equidiſtans eſt. g. d. & eſt diameter. h. t. Igitur. g. t. equalis. t. d. quod eſt abſurdum, ſupponitur enim. g. e. equalem eſſe. e. d. non igitur diameter eſt. h. t. ſimiliter vtiq; demonſtrabimus ꝙ neq; alia preter quam. e. z. Igitur. e. z. diameter eſt ſectionis.

℞ ℞ 648 p̄ ℞ quadra 9636



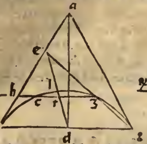
℞ 163913 p̄ ℞ 8663

¶ Propoſitio, Vigeſimanona.

SI in Coni ſectione vel circuli circunferentia duo lineę tangentes coincidant, que a contactione ipſarum ad ſectionem in duo coniungentis tactus ducitur linea, diameter erit ſectionis.

¶ Sit Coni ſectio vel circuli circũferentia cuius tangẽtes lineę ducãtur. a. b. &. a. g. coin cidẽtes ad. a. & cõiuncta. b. g. in duo ſecet ad. d. & cõiungatur. a. d. Dico ꝙ diameter eſt ſectionis, Si. n. poſſibile ſit, Sit diameter. d. e. & coniungatur. e. g. ſecabit vtiq; ſectionem ſecet ad. z. & per. z. ducatur. z. h. e. equidiſtans. g. d. b. qñ igitur. g. d. equa lis eſt. d. b. Igitur &. z. t. eq̃lis. t. h. & qm̃ tangẽs ad. l. equidiſtãs eſt. b. g. eſt aũt &. z. h. eq̃diſtãs. b. g. Igitur &. z. h. equidiſtãs eſt tãgẽti ad. l. Igitur. z. t. eq̃lis. t. e. qđ eſt ĩpoſſibile, nõ igiť diameter eſt. d. e. ſimiliter vtiq; demõſtrabimus ꝙ neq; alia p̄ter quã. a. d.

℞ ℞ 32449 p̄ ℞ 7789



℞ 64931 m̄ ℞ 18741

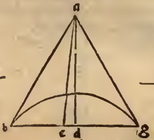
¶ Propoſitio, Trigeſima.

SI Coni ſectionem vel circuli circunferentiam duo lineæ tangẽtes coincidant, que a contactione ducitur diameter in duo ſecabit lineã tactus coniungẽtem.

¶ Sit Coni ſectio vel circuli circunferentia. b. g. & ducantur duo ipſam tan-

tes.b.a.&.a.g.coincidentes ad.a.& coniungatur.b.g. & ducatur per.a.diameter ſectionis.a.d.Dico ꝙ.d.b.eq̃lis eſt.d.g.non.n.Sed ſi poſſibile ſit.b.c.equalis.e.g.& coniungatur.a.e.Siue.n.deſectio ſit ſectio.a.ad quod coincidunt inuicem diametri,centrum erit ſectionis extra,quod eſt impoſſibile, Siue parabole ſit ſectio,coincidunt inuicem diametri,Siue hyperbole ſir & coincidunt ſectioni.b.a.&.a.g.non cōtinētes contactiones ipſarū,itra āgulū eſt cōtinentē hyperbolē.Sed & i ipſa, Centrū.n.ſupponitē diametris exiſtētibus.a.d.&.a.e.qđ eſt abſurdū,nō igitur.b.e.eſt equalis.e.g.

℞ ℞ 42614 m̄ ℞ 21804

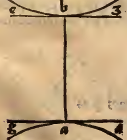


℞ ſciolta 13899 p̄ ℞ 663

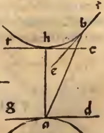
¶ Propoſitio, Trigeſimaprima.

SI vtranq; cōtrapoſitarū duo lineę tangāt, Siquidē cōiungens tactus per cētrum cadat equidiſtātes erūt tangētes,Si aūt non coincidet ad eadem centro.

¶ Sint contrapoſitę ſectiones.a.&.b.& tangētes ipſas ſint.g.a.d.&.e.b.z.ad.a.b.& ab.a.ad.b.cōiuncta,cadat prius per cētrum ſectionū.Dico ꝙ.g.d.eqdiſtās eſt.e.z.qñ.n.cōtrapoſitę ſunt ſectiones quarū diameter eſt.a.b.& vnā ipſarū tangit.g.d.ad.a.Igitur quę per.b.ducitur equidiſtās.g.d.tāget ſectionē tangit aūt &.e.z.Igitur.g.d.equidiſtās eſt.e.z.Nō ſit vtiq; ab.a.ad.b.ducta per cētrum ſectionū & ducatur diameter ſectionū.a.h.& tangēs ſectionē ducatur.t.c.Igitur.t.c.equidiſtans eſt.g.d.& qm̄ hyperbolē duo lineę tāgunt.e.z.&.t.c.coincidēt igitur & eſt.t.c.equidiſtās.g.d.Igitur &.g.d.&.e.z.productę coincident & manifeſtum ꝙ ad eadem centro.



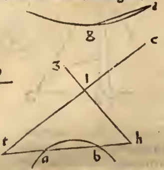
℞ ℞ Cubica quadrata 9816 p̄ 8



¶ Propoſitio, Trigeſimaſecunda.

SI vtriq; contrapoſitarum lineę coincidentes ad vnum tangentes vel ad duo ſecantes, lineæ coincidant, Contactio ipſarum erit in deinceps angulo continentis ſectionem anguli.

¶ Sint contrapoſitæ ſectiones contrapoſitarum vel ad vnum tangentes vel ad duo ſecantes lineę.a.b.&.g.d.productę coincidant. Dico q; Contactio ipſarum erit in deinceps angulo continentis ſectionem anguli. Sint non tangentes ſectiones.z.h.&.t.h. Igitur a.b.producta coincidet non tangentibus. Coincidat ad.c.t.& quoniam ſupponuntur coincidentes.g.d.&.h.t.manifeſtum q; vel in loco qui eſt ſub angulo.t.l.z.coincident, vel in eo qui eſt ſub.c.l.h.ſimiliter autem & ſi tangant.

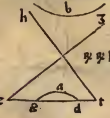


℞ ligata 32884 p̃ 89 ℞ Cronica 1689 p̃ ℞ 512

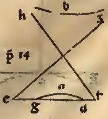
¶ Propoſitio, Trigeſimatertia.

SI vni contrapoſitarũ linea coincidẽs producta in vtrãq; extra ſectionẽ cadet, non coincidet alteri ſectiõi, ſed coincidet p tres locos quorũ eſt vnus quidẽ q ſub continẽte angulo ſectionẽ, duo aũt ſub angulis deinceps ãguli cõtinẽtis ſectionem.

¶ Sint contrapoſitæ ſectiones.a.b.& quedam linea.g.d.ſecet.a.& producta in vtraq; extra ſectionem cadat. Dico q;.g.d.non coincidit ſectioni.b.ducantur.n.non tangentes ſectionem.e.z.&.h.t.Igitur.g.d.producta coincidet non tangentibus non coincidit autem ad aliam q̃ ad.h.t.quare non coincidit neq; ſectioni.b.& manifeſtum q; per tres locos cadet ſi.n.vtriq; contrapoſitarum coincidit quedam linea, neq; vni contrapoſitarum ei, Coincidet ad duo puncta, Si.n.coincidat ad duo puncta per prius demonſtratum alteri ſectioni non coincidit.



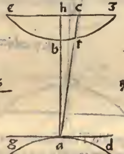
℞ ℞ ligata & ſciolta cubica & quadrata 12893 p̃ 14



¶ Propoſitio, Trigeſimaquarta.

SI vnam contrapoſitarum linea quedam tangat & huic equidiſtans ducatur in altera ſectione, que a tactu ad mediam tangentem ducitur linea, diameter erit contrapoſitarum.

¶ Sint contrapoſitæ ſectiones.a.&.b.& vnam ipſarum ſilicet.a.tangat quedam linea g.d.ad.a.& ducatur.e.z.equidiſtans.g.d.in altera ſectione & ſecetur in duo ad.h.& coniungatur.a.h. Dico ꝙ.a.h.diameter eſt contrapoſitarum. Si.n.poſſibile ſit.a.t.c.igitur tangens ad.h.equidiſtans eſt.g.d. Sed &.g.d.equidiſtans eſt.e.z.Igitur & ad.t.tangens equidiſtans eſt.e.z.igitur.e.c.equidiſtãs eſt.c.z.quod eſt impoſſibile nam.e.h.equalis eſt.h.z.non igitur diameter eſt.a.t.contrapoſitarum ergo.a.b.

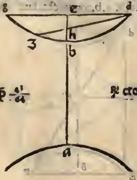


℞ ℞ ſciolta 1496 m̃ ℞ 816 — ℞ ℞ ligata 14984 p̃ ℞ 496

¶ Propoſitio, Trigeſimaquinta.

SI diameter in vna contrapoſitarum lineam quandã in duo ſecet tangẽs alteram ſectionẽ ad extremum diametri equidiſtãs erit in duo ſecatæ lineæ.

¶ Sint cõtrapoſitę ſectiones.a.&.b.diameter autẽ ipſarũ.a.b.in ſectione in duo lineam.g.d.ad.e.Dico ꝙ tangẽs ſectionẽ ad.a.equidiſtãs eſt.g.d.ſi.n.poſſibile,ſit tangens ſectionem ad.a.equidiſtans.d.z.Igitur.d.h.equalis eſt.h.z.eſt autẽ &.d.e.equalis.e.g.igitur.g.z.equidiſtãs eſt.h.z.quod eſt impoſſibile. Producta.n.ipſi coincidit, non igitur equidiſtãs eſt.d.z.tangẽti ſectionem ad.a.neq; alia quedam preter.g.d.

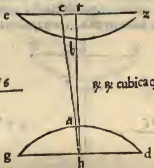


℞ ℞ 4981 p̃ ℞ ligata 8889 p̃ 41/64 — ℞ cronica 14936 p̃ ℞ cuba 64

¶ Propoſitio, Trigeſimaſexta.

SI ad vtranq; cõtrapoſitarum lineæ ducantur equidiſtantes exiſtentes, linea coniungens in duo ſectiones ipſarum diameter erit compoſitarum.

¶ Sit contrapoſitæ ſectiones.a.&.b.& in vtranq; ipſarum ducantur lineæ.b.g.&.e.z.& ſint equidiſtãtes & ſecetur vtraq; ipſarum in duo ad.h.&.t.puncta & cõiungatur.h.t.Dico q.h.t.diameter eſt contrapoſitarum, Si.n.non ſit.h.c.Igitur tangens ad.a.equidiſtans eſt.g.d.quare &.t.z.igitur.e.c.equalis eſt.c.z.quod eſt impoſſibile quoniã &.e.t.equalis eſt.t.z.nõ igitur.h.c.diameter eſt cõtrapoſitarũ ergo.h.t.



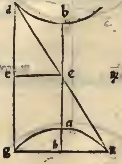
℞ 15989 p̃ ℞ cuba 4096

℞ ℞ cubica quadrata 3698 p̃ ℞ 84

¶ Propoſitio, Trigeſimaſeptima.

SI contrapoſitas linea ſecet nõ per centrũ, que a ſectione in duo ipſius ad centrum coniungitur diameter eſt contrapoſitarum, que dicitur recta, tranſuerſa autem coniuncta ipſi, a centro ducta equidiſtans in duo ſecatæ.

¶ Sint contrapoſitę ſectiones.a.&.b.&.a.b.linea.g.d.ſecet non per centrũ exiſtens & ſecetur in duo ad.e.& centrũ ſectionũ ſit.e.& cõiungatur.e.e.& per.e.ducatur.a.b.equidiſtãs.g.d.Dico q.a.b.&.e.e.cõiunctę ſunt diametri ſectionum, coniungatur.n.d.e.& producatur ad.z.& cõiungatur.g.z igitur.d.e.equalis eſt.e.z.eſt autẽ &.d.e.equalis.e.g.equidiſtans igitur eſt.e.c.z.b.producatur.b.a.ad.h.& quoniã.d e.equalis eſt e.z.igitur &.e.e.equalis.z.h.quare &.g.h.equalis.z.h.igitur tangens ad.a.equidiſtãs eſt.g.z.quare &.e.e.igitur.e.c.&.a.b.coniunctæ ſunt diametri.



℞ ℞ ſciolta 24824 p̃ ℞ 48

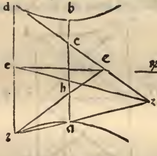
℞ ℞ ſciolta 13914 p̃ ℞ 8729

¶ Propoſitio, Trigeſimaoctaua.

SI contrapoſitas duo lineę tangant coincidentes, que a contactione coniungitur ad mediam tactus coniungentem, diameter erit contrapoſitarum, que dicitur recta, tráſuerſa autē coniuncta que per centrū ducit̃ ad tactus cōiungētem.

¶ Sint contrapoſitę ſectiones a. & .b. tangētes autē ſectiones .g.e. & .e.d & cōiungatur g.d. & ſecetur in duo ad .e. & cōiungat̃ .e.c. Dico q̄ .c.e. diameter eſt que dicit̃ recta tranſuerſa autē coniuncta ipſi que per centrum equidiſtās .g.d. ducitur. Sit ſi poſſibile diameter .e.z. igitur .d.e. coīcidit .e.z. coincidat ad .z. & cōiungat̃ .g.z. coīcidit igitur g.z. ſectioni coincidat ad .a. & per .a. ducatur .a.b. equidiſtās .d.g. qm̃ igitur diameter eſt e.z. & .g.d. in duo ſecat & eq̄diſtātes ipſi in duo ſecat, igitur .a.h. equalis eſt .h.b. & qm̃ g.e. equalis eſt .e.d. & eſt in triāgulo .z.g.d. igitur & .a.h. equalis .h.c. quare & .h.c. eſt equalis .h.b. quod eſt impoſſibile non igitur .e.z. diameter erit.

℞ ℞ 14913 p̃ ℞ cuba 64 — ℞ 8612 p̃ ℞ prolata 39

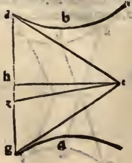


¶ Propoſitio, Trigeſimanona.

SI contrapoſitas duo lineę tangant coincidentes, que eſt per centrum & contactionem tangentium in duo ſecat tactus coniungentem lineam.

¶ Sint contrapoſitę ſectiones .a. & .b. & ducātur duo lineę .g.e. & .e.d. tangētes a.b. & cōiungat̃ .g.d. & diameter ducat̃ .e.z. Dico q̄ .g.z. eq̄lis eſt .z.d. Si .n. nō, ſecet̃ .g.d. in duo ad .h. & cōiungat̃ .h.e. igit̃ .h.e. diameter eſt, eſt āt & .e.z. centrū igitur eſt e. igit̃ cōtactio tāgentiū in cētro ſectionū qđ eſt abſurdū. Igit̃ .g.z. eq̄lis .z.d.

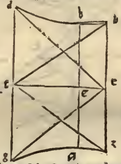
℞ ℞ cubica quadrata 864 — ℞ ligata 1613 m̃ ℞ 46 $\frac{1}{4}$



¶Propoſitio, Quadrageſima.

SI contrapoſitis duo lineę tangẽtes coincidant, & per cõtactũ linea ducatur ad tactus coniungentẽ coincidens ſectionibus & a cõtactionibus ductę ad mediam tactus coniungentem tanget ſectiones.

¶Sint cõtrapoſitę ſectiões.a,b. & ducãtur duo lineę.g.e. &.e.d.tãgẽtes.a.b. & cõiungať.g.d.& p.e.ducať.z.e.h,eqdiſtãs.g.d.& ſeceť.g.d.in duo ad.t.& cõiungať.z.t.&.t.h. dico q̄.z.t.&.t.h.tãgũt ſectiões.cõiungať.e.t.diameter igiť eſt.e.t.recta,trãſuerſa ãt cõiuncta ipſi que p cẽtrum eqdiſtãs.g.d.duciť,relictũ ſit centrũ.e.& ducatur e.a.b.eqdiſtãs.g.d.igiť.t.e.&.a.b.cõiunctę sũt diametri & ordinate ducta eſt.g.t.ad ſecũdã diametrũ,tangẽs aũt ſectionẽ eſt.g.e.coicidẽs ſecũdę diametro qď igiť eſt ſub t.e.t.eq̄le eſt eo qď fit a dimidio ſecũdę diametri idẽ quartę parti ſpeciei ad.a.b.& ordinate quidẽ ducta eſt.z.e.cõiuncta aũt eſt.z.t.propter hoc.z.t.tãgit ſectionẽ ſimiliter vtiq; &.h.t.tãgit.b.ſectionẽ.Igitur.z.t.&.t.h.tãgunt ſectiones.a.&.b.



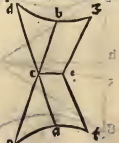
℞ ℞ ligata & ſciolta 512

℞ Cronica 12839

¶Propoſitio, Quadrageſimaprima.

SI in contrapoſitis duo lineę ſecẽt ſe inuicẽ, nõ p centrũ, nõ ſecãt ſe inuicẽ p mediũ.

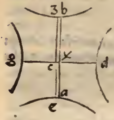
¶Sit cõtrapoſitę ſectiões.a.&.b.& in.a.&.b.duo lineę.g.b.&.a.d.ſecẽt ſe inuicẽ ad.e.nõ p centrũ exiſtẽtes.Dico q̄ nõ ſecãt ſe inuicẽ per mediũ.Si.n.poſſibile ſecẽtur,& cẽtrum ſectionũ ſit.e.& cõiungať.e.e. diameter igiť eſt.o.e.ducatur p e.e.z.equidiſtãs.b.g.igiť.e.z.diameter eſt & cõiuncta.e.e.Igitur ad.z.tangẽs equidiſtãs eſt.e.e.p eadẽ vtiq; ducta.t.e.equidiſtãte.a.d.tangẽs ad.t.equidiſtãs eſt.e.e.quare & tangens ad.z.equidiſtans eſt tangenti ad.t.quod eſt abſurdũ,demõſtrata.n.eſt & coincidẽs non igitur.g.b.&.a.d.per centrũ exiſtẽtes ſecantur inuicem per medium.



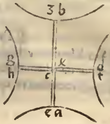
¶Propoſitio,Quadrageſimaſecunda,

SI in contrapoſitis ad coniunctionem duo lineę ſe inuicem ſecent nō per centrum exiſtentes,non ſecant ſe inuicem per medium,

¶Sint ad coniunctionem contrapoſitæ ſectiones,a,b.&,g.d.& in ſectionibus a.b.&.g.d.duo lineę.e.z.&.h.t.ſecentur inuicē ad.c.non per centrū exiſtētes, Dico q non ſecāt ſe inuicē per mediū.Si.n.poſſibile ſecētur ,& centrū ſectionū ſit.c.& ducatur a.b.equidiſtās.e.z.&.g.d.t.h.& cōiungat.c.e.Igitur.c.e.&.a.b.cōiunctę sūt diametri, ſimiliter &.e.c.&.g.d.cōiunctę ſunt diametri quare tangēs ad.a.equidiſtās eſt tangēti ad.g.quod eſt īpoſſibile,coincidit.n. /quoniā tangens ad.g.ſecat ſectiones.a.&.b.tangens autē ad.a.ſecat.d.&.g.& manifeſtū q contactio ipſarum eſt in loco qui eſt ſub.a, e.g.angulo,non igitur.e.z.&.h.t.non per centrum exiſtentes ſecant ſe inuicem.



℞ ℞ Cubica quadrata 9800

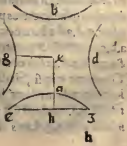


¶Propoſitio,Quadrageſimatertia.

SI vnam ad coniunctionem contrapoſitarum linea ſecet ad duo puncta, per centrum autem,hæc quidem ad mediam ſecantem ducatur,hæc autē ſecantem,Coniunctæ erunt diametri contrapoſitarum.

¶Sint ad coniunctionem contrapoſitę ſectiones.a.b.&.g.d.& ſecet.a.linea quedam ad duo puncta.e.&.z.& ſecetur per medium.e.z.ad.h.& centrū quidē.c.& coniungatur c.h.equidiſtās aūt ducatur.g.e./e.z. Dico q.a.c.&.c.g.cōiunctę ſunt diametri, qm̄.n. diameter eſt.a c.& per medium ſecat.e.z.tangēs ad.a.equidiſtās eſt.e.z.quare &.g.e. qm̄ igitur cōtrapoſitæ ſunt ſectiones & vni ipſarū ſilicet.a.ducta eſt tangēs ad.a.a centro autem.c.hæc quidem ad tactum coniuncta eſt ſilicet.c.a.hæc autem ad tangentem ducta eſt.g.e.Igitur.g.a.&.g.e,cōiunctę ſunt diametri,hoc.n.prius demōſtratū eſt.

℞ ℞ ligata 4916 p ℞ Cubica quadrata 32988



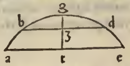
¶Propoſitio, Quadrageſimaquarta.

DAta Coni ſectione diametrum inuenire.

¶Sit data Coni ſectio in qua.a.b.g.d.pũcta, oportet vtiq; ipſius diametrum inuenire, fiat, & ſit.g.t.ductis vtiq; ordinate.d.z.&.e.t.& pductis erit quidem a.z.equalis.z.b.&.e.t./t.a.ſi igitur ordinemus.b.d.&.e.a.poſitiõe exiſtẽtes eqdiſtantes, erunt data.t.&.z.puncta quare poſitione erit.t.g.z.

¶Componetur autem ſic, Sit data Coni ſectio in qua.a.b.g.d.e.puncta, & ducãtur equidiſtantes.b.d.&.a.e.& ſecentur per medium ad.z.&.t.& coniuncta.z.t.diameter erit ſectionis: Eodem modo infinitos inueniemus diametros.

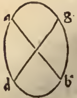
℞ ligata 324 m̃ ℞ 2.83



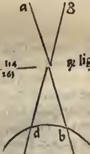
℞ 9614 p̃ ℞ 584 m̃ 14/21

¶Propoſitio, Quadrageſimaquinta.

DAta defectione vel hyperbole centrum inuenire. hoc autem manifeſtum, Si.n.ducantur duo diametri ſectionis.a.b.&.g.d.ad quod ſecabunt ſe inuicem, erit ſectionis centrum vt ſupponitur.



℞ ℞ 6913 m̃ ℞ ℞ 2233 p̃ 114/263



℞ ligata 1916 p̃ ℞ 89/93

¶Propoſitio, Quadrageſimaſexta.

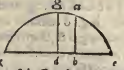
DAta Coni ſectione axim inuenire.

¶Sit data coni ſectio prius parabole in qua.z.g.e.puncta, oportet autem ipſius axim inuenire ducatur autem diameter ipſius.a.b.Siquidẽ.a.b.axis eſt, factum eſt ordinatum, Si autem non fiat, & ſit axis.g.d.Igitur axis.g.d.equidiſtans eſt.a.b.& ductas in ipſam cathetos per medium ſecat, Sed ad.d.g.catheti & ad.a.b.catheti ſunt, quare.g.d.ad.a.b.cathetos per medium ſecat. Si igitur ordinauero.e.z.cathetum ad a.b.erit poſitiõe & propter hoc.e.d.equalis eſt.d.z.datum igitur eſt.d.dato igitur.d.ducta eſt.g.d.poſitione ad.a.b.poſitione igitur eſt.g.d.

¶Cõponetur vtiq; ſic, Sit data parabole in qua.z.e.a.& ducatur ipſius diameter.a.b.& in ipſam cathetus ducatᷓ.b.e.& producatᷓ ad.z.Siquidẽ igitur.e.b.equalis eſt.b.z.manifeſtũ q̃.a.b.axis eſt ſi ãt non ſecetᷓ.e.z.p mediũ ad.d.& ducatᷓ.g.d.eqdiſtãs.a.b.manifeſtũ vtiq; q̃.g.d.axis eſt ſectiõis, eqdiſtãs exiſtẽs diametro, ideſt diameter exiſtẽs

per mediũq; & ad rectos ſecat.e.z. Datę igitur paraboles axis inuentus eſt.g.d.& manifeſtum q. vnus axis eſt paraboles, Si.n.alius erit vt.a.b.erit equidiſtans.g.d.& ſecat e.z.quare & per medium Igitur,b.e.equalis eſt.b.z.quod eſt abſurdum.

℞ ligata 2916

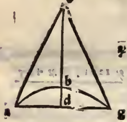


℞ Cubica quadrata 2416

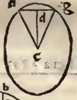
¶Propoſitio,Quadrageſimaſeptima.

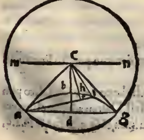
Datæ hyperboles vel defectionis axim inuenire.

¶Sit hyperbole vel defectio.a.b.g.oportet vtiq; ipſius axim inuenire, Inueniatur,& ſit.c.d.cētrũ aũt ſectionis.c.Igitur.c.d.in ipſá ordinate ductas p medium & ad rectos ſecat,ducaẽ cathetus.g.d.a.& cõiungãtur.c.d.&.c.g.qñ igitur.g.d.equalis eſt.d.a.Igitur &.g.c.equalis.c.a. Si ordinauerimus datũ.g.Erit data.g.c.quare centro.c.& ſpatio.c.g.circulus deſcriptus veniet & p.a.& eſt poſitione datus,eſt aũt &.a.b.g.ſectio data poſitione datũ igitur.a.eſt autẽ &.g.datũ igitur poſitione.g.a.& eſt.g.d.equalis.d.a.datũ igitur.d.Sed &.c.datũ igitur poſitiõe.d.c.Componeẽ aũt ſic,Sit data hyperbole vel defectio.a.b.g.& relictũ ſit ipſius centrũ.c.relictũ autẽ ſit in ſectione cõtingẽs punctũ.g.& cẽtro.c.ſpatio ãt.c.g. Circulus deſcribatur.g.e.a.& cõiungatur g.a.& per mediũ ſecetur ad.d.& cõiungãtur.c.g.&.c.d.& producaẽ.c.d.ad.b.qñ igitur.a.d.equalis eſt.d.g.Cõmunis autẽ.d.c. Dico igitur.g.d.c.duabus.a.d.c.ſunt equales & baſis.c.a.equalis.c.g.Igitur.c.b.d.per mediũq; & ad rectos ſecat.a.d.g.axis igitur eſt.c.d.ducaẽ per.c.m.c.n.eqdiſtãs.g.a.Igiẽ.m.n.axis eſt ſectiõis cõiunctus.b.c.



℞ ℞ Cubica quadrata 2914 p̃ ℞ 4096



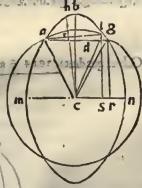


℞ prolata 12900



Propoſitio, Quadrageſimaoctaua.

Emonſtratis vtiq; his deinceps demonſtrandum eſt q; axes earūdem ſectionum non ſunt, ſi, n. poſſibile ſit & alter axis. c. h. per eadē vtiq; antea ducta catheto. a. t. erit. a. t. equalis. t. l. quare &. a c. /c. l. ſed &. c. g. quod eſt abſurdū, q; igitur &. a. e, g, Circulus ad aliud punctū inter. a. b. g. nō coincidit ſectiōi in hyperbole manifeſtum, In defectione autē catheti ducātur. g. b. &. l. s. qñ igitur. c. g. equalis eſt. c. l. ex centro, n, equale eſt & quod fit ex. g. c. ei quod fit ex. c. l. Sed ei quidē quod fit ex. g. c. equalia ſunt que ex. g. r. &. r. c. fiunt eiq; quod fit ex. l. c. equalia ſunt que fiunt ex. c. s. Igitur que fiunt ex. g. r. &. r. c. equalia sūt his que fiunt ex. l. s. &. s. c. Eo igiť quo differt quod fit ex. g. r. ab. e, o. quod fit ex. l. s. hoc differt quod fit ex. s. c. ab eo quod fit ex. c. r. rurſus quoniam quod eſt ſub. m. r. n. cum eo quod fit ex. r. c. equale eſt ei quod fit ex. c. m. eſt autem & quod fit ex, m, g n. cum eo quod fit ex. s. c. equale ei quod fit ex. c. m. quod igitur eſt ſub, m, r, n. cum eo quod fit ex. r. c. equale eſt ei quod eſt ſub. m. s. n. cum eo quod fit ex. s. c. eo igitur quo differt quod fit ex. s. c. ab eo qď fit ex. c. r. hoc differt quod eſt ſub. m, r, n. ab eo quod eſt ſub. m. s. n. demonſtratum eſt autem q; eo quo differt quod fit ex. s. c. ab eo quod fit ex. c. r. hoc differt quod fit ex. g. r. ab eo quod fit ex. l. s. quo igitur differt quod fit ex. g. r. ab eo quod fit ex. s. l. hoc differt quod eſt ſub. m. r. n. ab. eo quod eſt ſub, m, s, n, & quoniam applicatę ſunt. g. r. &. l. s. eſt vt quod fit ex. g. r. ad id quod eſt ſub. m. r. n, quod fit ex. l. s. ad id quod eſt ſub. m. s. n. demonſtratū autem eſt & in vtriſq; eadē excellētia, equale igitur eſt quod fit ex. g. r. ei quod eſt ſub. m. r. n. quod autē fit ex. l. s. quod eſt ſub. m. s. n. Circulus igitur eſt. l. g. m. linea, quod eſt abſurdum, ſupponitur enim defectio.



℞ ligata 286² p ℞ 81

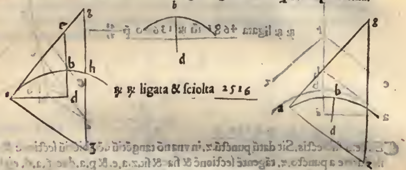
℞ 12916 p ℞ 405

Propoſitio, Quadrageſimanona.

Oni ſectione data & puncto non intra ſectionem ducere a puncto lineam ad vnum tangentem ſectionem.

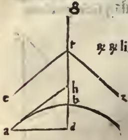
Sit data Coni ſectio prius parabole, cuius axis. b. d. oportet vtiq; a dato puncto qď nō eſt intra ſectionē ducere lineam vt prius poſitū eſt, Datum aūt punctum vel in ſectiōe eſt vel in axi vel in aliquo extra loco, Sit igiť in linea, & ſit. a. & fiat, & ſit. a. e.

& cathetus ducatur.a.d.erit vtiq; poſitione & eſt.b.e.equalis.b.d.& eſt data.b.d.data igitur eſt &.b.e.& eſt.b.datum,datũ igitur &.e.Sed &.a.poſitione igitur.a.e.Componetur autem ſic, ducatur ab.a.cathetus.a.d.& ponatur.b.e.equalis.b.d.& cõiungatur.a.e.manifeſtum vtiq; ꝙ tanget ſectionem, Sit rurſus datum punctũ in axi quod ſit e.fiat & ducatur tangens.a.e.& cathetus ducatur.a.d.Igitur.b.e.equalis eſt.b.d.& data.b.e.data igitur &.b.d.& eſt datum.b.datum igitur &.d.& eſt recta.d.a.datũ igitur &.a.Sed &.e.poſitione igitur.a.e.Componatur autem ſic ponatur.b.d.equalis.b.e.& a puncto.d./d.a.recta lineę.d.e.& coniungatur.a.e.manifeſtum vtiq; ꝙ.a.e.tangit, manifeſtũq; & ꝙ ſi datum pũctum idem ſit.b.ꝙ ducta a puncto.b.recta tãgeret ſectionem,Sit autem punctum.g.& fiat,& ſit.g.a.& per.g.ducatur.g.z.equidiſtãs axi idem b.d.poſitione igitur eſt.g.z.& ab.a.ad.g.z.ordinate ducatur.a.z.erit vtiq;.g.h.equalis.z.h.& eſt datum h.datum igitur &.z.& applicata eſt.z.a.ordinate ideſt equidiſtans tangenti ad.h.poſitione igitur eſt.z.a.datum igitur &.a.Sed &.g.poſitione igitur eſt g.a.Componetur ſic ducatur per.g./g.z.equidiſtans.b.d.& ponatur.z.h.equalis.g.h.& ducatur.z.a.eqdiſtãs tangẽti ad.h.& cõiungatur.a.g.manifeſtũ ꝙ faciet problema.

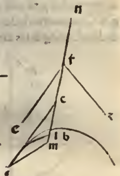


Sit rurſus hyperbole cuius axis.b.d.g.centrum autem.t.non tangentes autem.t.e.&.t.z.datum autem punctum, vel in ſectione dabitur vel in axi vel intra angulum qui eſt ſub.e.t.z.vel in aliquo deinceps loco vel in vna non tangentium non abientium ſectionem vel in eo loco qui eſt inter ambientes eam quæ eſt ad ſumitatem anguli qui eſt ſub t.z.e.Sit prius in ſectione vt.a.& fiat & ſit tangens.a.h.& ducatur cathetus.a.d.tranſuerſum autem ſpeciei latus ſit.b.g.Erit vtiq; vt.g.d.ad.d.b.ſic.g.h.ad.h.b.ratio.g.d.ad.d.b.data. Data.n.vtraq; ratio igitur &.g.h.ad.h.b.& eſt data.b.g.datum igitur &.h.Sed &.a.poſitione igitur Componetur ſic,ducatur ab.a.cathetus.a.d.& ratio.g.h.ad.h.b.eadem ſit rationi.g.d.ad.d.b.& coniungatur.a.h.manifeſtum vtiq; ꝙ.a.h.tanget ſectionem rurſus vtiq; ſit datum punctum in axi quod ſit.h.& fiat & ducatur.a.h.tangens & cathetus ducatur.a.d.per eadem vtiq; erit vt.g.h.ad.h.b.ſic.g.d.ad.d.b.& eſt data.b.g.d.datum igitur.d.& eſt recta.d.a.poſitione igitur.d.a.poſitiõe autem & ſectio datum igitur.a.Sed &.h.poſitione igitur eſt.a.h.Componetur autem ſic,ſupponatur alia quidẽ eadẽ & fiat ratio.g.d.ad.d.b.idẽ ratiõi.g.h.ad.h.b.& recta ducatur

d.a.& cõiungat̃.a.h.manifeſtũ vtiq; q.a.h.facit ꝓblema & q;'ab.h.ducet̃ vtraq; tangẽs ſectionẽ ad alteras partes eiſdẽ ſubiectis ſit datũ punctũ.c.itra locũ ãguli q eſt ſub e.t.z.& decens ſit a puncto.c.ducere tangentem ſectionem & fiat & ſit.c.a.& coniuncta.c.t.producatur & ponatur.t.n.equalis.l.t.omnia igitur data,erit vtiq; &.l.n.data. ducatur ordinate.a.m.ad.m.n.erit utiq; & ut.n.c.ad.c.l.ſic.m.n.ad.m.l.ratio aũt.n.t. ad.c.l.data,ratio igit̃ &.n.m.ad.m.l.data, & eſt datũ.l.datũ igitur &.m. & ordinate applicata.m.a.eq̃diſtãs tãgẽti ad.l. poſitiõe igit̃ eſt.m.a.poſitiõe aũt &.a.l.b.ſectio, datũ igitur.a.Sed &.c.datũ,data igitur.c.a.Cõponet̃ aũt ſic ſupponat̃ alia q̃dẽ eadẽ & datum punctum.c.& coniuncta.c.t.producatur & ponatur.t.n.equalis.l.t.& fiat vt.n.c.ad.l.c.ſic.n.m.ad.m.l.& ducatur.m.a.equidiſtans tangenti ad.l.& coniungatur.c.a.Igitur.c.a.tanget ſectionem & manifeſtum q; & altera ducetur a puncto.c.tangens ſectionem ad alteras partes.

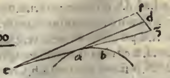


℞ ℞ ligata 4681 m̃ ℞ 13600 p̃ 41/71



Eiſdem ſubiectis.Sit datũ punctũ.z.in vna nõ tangẽtiũ nõ ãbiẽtiũ ſectionẽ & decẽs ſit ducere a puncto.z.tãgentẽ ſectionẽ & fiat & ſit.z.a.e.& p.a.ducat̃.a.d.eq̃diſtans e.t.Erit vtiq;.d.t.eq̃lis.d.z.q̃m &.z.a.equalis eſt.a.e.& eſt data.z.t.datũ igitur.d.& dato.d.ducta eſt.d.a.ad.e.t.poſitione.Igit̃ poſitione eſt.d.a.poſitione aũt & ſectio. Datum igit̃.a.Sed &.z.poſitione igitur.z.a.e.Componet̃ aũt ſic,ſit ſectio.a.b.&.e.t. &.t.z.non tangentes & datum punctum.z.in vna non tangentium & ambientium ſectionem & ſecetur.z.t.per medium ad.d.& per.d.ducatur.d.a.equidiſtans.t.e.& coniungatur.z.a.& quoniam.z.d.equalis eſt.d.t.equalis igitur &.z.a./a.e.quare per prius demonſtrata.z.a.tanget ſectionem.

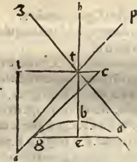
℞ 4589 p̃ ℞ cuba 6400



℞ 8941 p̃ ℞ 3513 p̃ 81/105

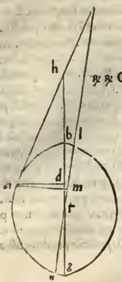
Eiſdem ſubiectis ſit datũ punctũ in loco qui eſt ſub angulo qui extra eſt ãbientiũ ſe-ctionẽ & ſit.c.oportet vtiq; a puncto.c.ducere tãgentẽ ſectionẽ,& fiat,& ſit.c.a.& cõiuncta.c.t.producaẽ,erit vtiq; poſitione.Si vero in ſectione relictũ ſit datũ punctũ.g. & p.g.ducaẽ.g.d.equidiſtãs.h.t.& ſi ſecetur.g d.per mediũ ad.e.& cõiuncta.t.e.& producaẽ erit poſitione diameter exiſtẽs cõiuncta.c.t.ponaẽ vtiq;.t.h.equalis.b.t.& per.a.ducatur.a.l.eqdiſtãs.b.t.erit vtiq; propterea quod.c.l.&.b.h.cõiunctę ſunt dia-metri & tangẽs.a.h.c.&.a.l.ductã ad.b.h.quod eſt ſub.c.t.l.equale eſt quartæ parti ſpeciei ad.b.h.datũ igiẽ quod eſt ſub.c.t.l.& eſt data.c.t.data igitur &.t.l.Sed & poſitione,& eſt datũ.t.datum igitur.l.& p.l.ducta eſt.l.a.ad.b.h.poſitiõe,poſitione igitur l.a.poſitione aũt & ſectio,datũ igitur.a.Sed &.c.poſitione igitur.a.c.Cõponeẽ aũt ſic, ſupponãtur alia qdẽ eadẽ datum aũt punctũ.c.in predicto loco & cõiuncta.a.t.producatur,& relictũ ſit quodã punctũ.g.& ducatur.g.d.eqdiſtãs.c.t.& ſecetur.g.d.p medium ad.e.& cõiuncta.e.t.producaẽ & ponatur.t.h.eqlis.b.t.Igitur.h.b.trãſuerſa diameter eſt cõiuncta.c.l.t.ponatur vtiq; qđ eſt ſub.c.l.t.eqle quartę parti ſpeciei ad.b.h. & per.l.ducatur.l.a.eqdiſtãs.b.h.& cõiungaẽ.c.a.manifeſtũ q;.c.a.tãget ſectionem per cõuerſionem propoſitionis,Si aũt in loco inter.z.t.p.detur impoſſibile erit problema, tangens.n.ſecabit.h.t.quare coincidet vtriq;.z.t.p.quod eſt ĩpoſſibile per demonſtrata in 31.primi & in 3.huius libri.

℞ Cronica 4910

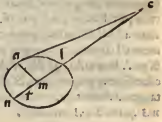


℞ 439 p̃ ℞ 383 m̃ ℞ 12600

Eiſdem ſuppoſitis ſit ſectio defectio datum autem punctum in ſectione.a.& decens ſit ab.a.ducere tangentem ſectionem,fiat & ſit.a.h.& ab.a.ad.b.g.axim ducatur.a.d.erit vtiq; datum.d.& erit vt.g.d.ad.d.b.ſic.g.h.ad.h.b.& eſt ratio.g.d.ad.d.b.data,ratio igitur &.g.h.ad.h.b.data,datum igitur.c.Sed &.a.poſitione igitur.a.h.componetur autem ſic ducatur cathetus.a.d.& ratio.g.h.ad.h.b.eadem ſit rationi.g.d.ad.d.b.& con iungatur.a.h.manifeſtum q;.a.h.tanget,quare & ad hyperbolem.Sit vtiq; datum punctum.c.& decens ſit ducere tangentem fiat,& ſit.c.a.& coniuncta.c.l.t.ad.t.centrũ pro ducatur ad.n.erit vtiq; poſitione & ſi ducatur.a.m.ordinate erit vt.n.c.ad.c.l.ſic.n.m. ad.m.l.ratio autem.c.n.ad.c.l.data ratio igitur &.m.n.ad.l.m.data,datum igitur.m.& applicata eſt.m.a.equidiſtans.n.eſt tangenti ad.l.poſitione igitur.m.a.datum igitur.a. Sed &.c.poſitione igitur.c.a.Compoſitio autem eadem ei quę ante ipſum.



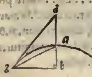
℞ ℞ Cubica quadrata 4816 p̄ ℞ ligata 15983 p̄ $\frac{41}{83}$



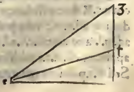
❡Propoſitio, Quinquageſima.

DAta Coni ſectione tangentem ducere quę ad axim angulum faciat ad eadem ſectioni, equalem dato acuto angulo.

❡Sit Coni ſectio prius parabole cuius axis.a.b.oportet vtiq; ducere tangentem ſectione quę ad axim.a.b.angulũ faciat ad eadem ſectioni equalem dato acuto. Fiat & ſit.g.d.eſt autem & quę eſt ad.b.data, rationes igitur.d.b.ad.b.g.datę, ratio autem.b.d.ad.b.a.data, Igitur & ratio.a.b.ad.b.g.data, & eſt datus angulus qui eſt.a.d.b.data igitur & quę eſt ſub.b.a.g.& eſt ad.b.a.poſitione & dato.a.poſitione igitur g.a.poſitione autem & ſectio, datum igitur.g.& tangit.g.d.poſitione igitur eſt.g.d. Cōponetur vtiq; problema ſic. Sit datus angulus acutus quæ eſt ſub.e.z.h.& relictum ſit punctum in.e.z.& cathetus ducatur.e.h.& ſecetur in duo.z.h.ad.t.& coniungatur t.e.& ponatur angulus qui eſt ſub.b.a.g.equalis angulo qui eſt ſub.h.t.e.& ducatur cathetus.b.g.& ponatur.a.d.equalis.b.a.& coniungatur.g.d.tangens igitur eſt.g.d.ſectionē. Dico vtiq; ꝙ que eſt ſub.g.d.b.eq̃lis eſt ei q̄ eſt ſub.e.z.h.qñ.n.eſt vt.z.h.ad h.t.ſic.d.b.ad.b.a.eſt aũt & vt.t.h.ad.h.e.ſic.a.b.ad.b.g.per equa igit̃ eſt vt.z.h.ad h.e.ſic.d.b.ad.b.g.& ſunt recti ãguli qui ſunt ad.h.b.eq̃lis igitur.z.ãgulus ãgulo.d.

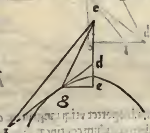


℞ Cronica 13983 p̄ $\frac{45}{94}$



Sit ſectio hyperbole & fiat & ſit tangens.g.d. & relictum ſit centrum ſectionis.e.& coniungatur.g.e.& cathetus.g.e.ratio igitur eius qui eſt ſub.e.e.d.ad id quod fit ex.e.g.data, eidem.n.eſt rationi tranſuerſę ad rectam, ratio autem eius quod fit ex g.e.ad id quod fit ex.e.d.data,data.n.vtraq; earum que ſunt ſub.g.d.e.&.d.e.g.ratio igitur & eius qui eſt ſub.e.e.d.ad id quod fit ex.e.d.data,quare & ratio.e.e.ad.e.d.eſt data, & data que eſt ad.e.data igitur & que eſt ad.e.poſitione vtiq; ad lineam.e.e.& data.e. ducta eſt quedam.g.e.in dato angulo poſitione igitur.g.e.poſitione autē & ſectio datum igitur.g.& ducta eſt tangens.g.d.poſitione igitur.g.d.ducatur.z.e.non tangens ſectionem, Igitur.g.d.producta coincidet non tangenti coincidat ad.z.maior igitur erit angulus qui eſt ſub.z.d.e.eo qui eſt ſub.z.e.d.oportebit vtiq; in compoſitione datum angulum maiorem eſſe dimidia contentæ ſub non tangentibus.

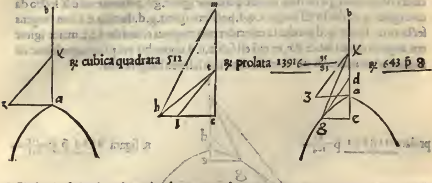
℞ prolata 118981 p̄ 85/104



℞ ligata 4814 p̄ ℞ 155/255

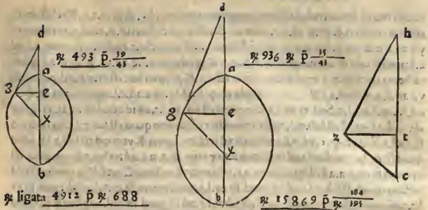
Componetur autem problema ſic.Sit data hyperbole cuius axis.a.b.non tangens aūt e.z.datus autem angulus acutus qui eſt ſub.c.r.h.maior exiſtens eo qui eſt ſub.a.e.z.& ducatur ab.a./a.z.ad rectos.a.b.relictum autem ſit punctum.h.in.h.t.& ducatur ab ipſo ad.t.c.cathetus.h.c.qm̄ igitur equalis eſt qui eſt ſub.z.e.a.ei qui eſt ſub.l.t.c.ſunt autem & āguli ad.a.c.recti eſt igitur vt.e.a.ad.a.z.:t.c.ad.c.l.Sed.t.c.ad.c.l.maiorem rationem habet q̄ ad.h.c.Igitur &.e.a.ad.a.z.maiorem retionem habet q̄.t.c.ad.c.h. quare & quod fit ex.e.a.ad id quod fit ex.a.z.maiorem rationem habet q̄ quod fit ex.t.c.ad id quod fit ex.c.h.vt autem id quod fit ex.e.a.ad id quod fit ex.a.z.tranſuerſa ad rectam,Igitur & tranſuerſa ad rectam maiorem rationem habet q̄ quod fit ex.t.c.ad id quod fit ex.c.h.Si autem faciamus vt quod fit ex.e.a.ad id qđ fit ex.a.z.ſic aliud quod ad id quod fit ex.c.h.maius erit eo quod fit ex.t.c.ſit quod eſt ſub.m.t.c.& coniungatur.h.m.qm̄ igitur maius eſt quod fit ex.m.c.eo quod eſt ſub.m.t.c.quod igitur fit ex m.c.ad id quod fit ex.c.h.maiorem rationem habet q̄ quod eſt ſub.m.t.c.ad id quod fit ex.c.a.ideſt quod fit ex.e.a.ad id quod fit ex.a.z.& ſi faciamus vt quod fit ex.m.c.ad id quod fit ex.c.h.ſic quod fit ex.e.a.ad aliud quid erit ad minus eo quod fit ex.a.z.& que a puncto.e.ad relictum punctum coniungitur linea ſimiles faciet triāgulos & propter hoc maior eſt qui fit ex.z.e.a.eo qui eſt ſub.h.m.c.ponat̃ vtiq; qui eſt ſub.a.e.g.equalis illi qui eſt ſub.h.m.c.Igitur.e.g.ſecabit ſectionem ſecet ad.g.& a pūcto.g.ducatur g.d.tangens ſectionem,& cathetus.g.e.ſimile igitur eſt trigonum.g.e.e.h.m.c.igitur vt quod fit ex.e.c.a.ad id quod fit ex.e.g.quod fit ex.m.c.ad id quod fit ex.c.h.eſt autem

& vt tranſuerſa ad rectam quodq́ eſt ſub.e.c.d.ad id quod fit ex.c.g.& quod fit eſt ſub m.c.t.ad id quod fit ex.c.h.& ex conuerſo vt quod fit ex.g.e.ad id quod eſt ſub.e.c.d. quod fit ex.h.c.ad id quod eſt ſub.m.t.c.per eq̄lia igitur vt quod fit ex.e.c.ad id quod eſt ſub.e.c.d.quod fit ex.m.c.ad id quod eſt ſub.m.c.t.Igitur & vt.c.e.ad.e.d./m.c.ad.c. t.erat autē & vt.g.e.ad.e.c./h.c.ad.c.m.per eq̄lia igitur vt.g.e.ad.e.d./h.c.ad.c.t.& sūt recti anguli qui ſunt ad.e.c.equalis igitur angulus qui eſt ad.d.ei qui eſt ſub.h.t.c.



❡Sit ſectio defectio cuius axis.a.b.oportet vtiq́ tangentem ducere ſectionem, que ad axim ad eadem ſectioni equalem angulum contineat dato angulo acuto,fiat & ſit.g.d. datus igitur eſt angulus qui eſt ſub.g.d.a.ducatur cathetus.g.e.ratio igitur eius quod fit ex.d.e.ad id quod fit ex.e.g.data,Sit centrum ſectionis.c.& coniungatur.g.c.ratio autē eius quod fit ex.e.g.ad id quod eſt ſub.d.e.c,data, eadem.n.eſt rectę ad tranſuerſam,Igitur & eius quod fit ex.d.e.ad id quod eſt ſub.d.e.c.ratio eſt data,Igitur &.d.e. ad.e.c.ratio eſt data, &.d.c.ad.c.g.Igitur ratio.g.e.ad.e.c.eſt data & eſt recta que eſt ad.e.datus igitur angulus ad.c.& eſt ad poſitionem & datum angulum, datum igitur eſt punctum.g.& a dato.g.tangens.g.d.poſitione igitur.g.d.

❡Cōponet aūt problema ſic,Sit datus quidē angulus acutus qui eſt ſub.z.h.t.& relictū ſit.z.in.z.h.& cathetus ducatur.z.t.fiat vt recta ad tranſuerſam quod fit ex.z.t.ad id quod eſt ſub.h.t.c.& coniungatur.c.z.& centrum ſectionis.e.& ponatur angulus qui eſt ſub.a.e.g.equalis ei qui eſt.h.c.z.& ducatur.g.d.tangens ſectionem.Dico q̄.g.d. facit problema,ideſt q̄ equalis eſt angulus qui eſt ſub.g.d.e.ei qui eſt ſub.z.h.t.qm̄.n. eſt vt.e.e.ad.e.g.ſic.c.t.ad.z.t.& vt igit̄ quod fit ex.e.e.ad id quod fit ex.e.g.ſic quod fit ex.c.t.ad id quod fit ex.z.t.eſt autem vt quod fit ex.g.e.ad id quod eſt ſub.d.e.e.ſic quod fit ex.z.t.ad id quod eſt ſub.c.t.h.vterq́.n.eſt idem rationi rectæ ad tranſuerſam, & per eq̄lia,vt igitur quod fit ex.e.e.ad id quod eſt ſub.e.e.d.ſic quod fit ex.c.o. ad id quod eſt ſub.c.t.h.igitur & vt.e.e.ad.e.d.ſic.c.t.ad.t.h.eſt autem & vt.e.e.ad.g. e./c.t.ad.z.t.per eq̄lia igitur eſt vt.d.e.ad.e.g.ſic.h.t.ad.z.t.& circa rectum āgulum latera proportionalia angulus igitur qui eſt ſub.g.d.e.eſt equalis angulo qui eſt ſub z.h.t.Igitur.g.d.facit problema.



℃Propoſitio,Quinquageſimaprima.

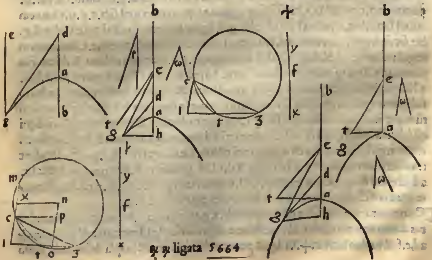
DAta Coni ſectione ducere tangentem que ad ductam diametrum per punctum equalem angulum contineat dato acuto.

℃Sit data Coni ſectio prius parabole,data autem.t.oportet vtiq; ducere tāgentem parabolem que cum diametro que fit a tactu equalē continebit angulum ei qui eſt ad.t.fiat & ducatur tangens.g.d.faciens ad ductam per tactum diametrum.e.g.angulum qui eſt ſub.e.g.a.equalem.t.& coincidat.g.d.axi ad.d.qñ igitur.a.d.equidiſtans eſt.e.g.angulus qui eſt ſub.a.d.g.equalis eſt ei qui eſt ſub.e.g.d.datus autem eſt is qui eſt ſub.e.g.d.equalis.n.eſt.t.datus igitur & qui eſt ſub.a.d.g.

℃Componetur vtiq; ſic,Sit parabole,cuius axis.a.b.datus autem angulus.t.ducatur.g.d.tangens ſectionem faciens ad axim angulum qui eſt ſub.a.d.g.equalem.t.& per.g.ducatur.e.g.equidiſtās.a.b.qñ igitur āgulus.t.equalis eſt ei qeſt ſub.a.d.g.eſt autem qui eſt ſub.a.b.g.equalis ei qui eſt ſub.e.g.d.Igitur & .t.equalis eſt ei qui eſt ſub.e.d.g. Sit ſectio hyperbole cuius axis.a.b.centrū autē.c.non tangēs autem.e.t.datus autem angulus acutus. ω.& tangēs.g.d.& coniungatur.g.e.faciens problema, & ducatur cathetus.g.h.data igitur ratio eſt tranſuerſæ ad rectam quare & eius qui eſt ſub.e.h.d.ad id quod fit ex.g.h.ponatur quędā linea data.z.t.& in ipſa deſcribatur circulis ſectio ſuſcipiens āgulum equalem ω.erit igitur maior ſemicirculo & a quodam puncto eorum que ſunt in circunferentia ſilicet.c.ducatur cathetus.c.l.faciens rationem eius qui eſt ſub.z.l.t.ad id quod fit ex.l.c.eadem rationi tranſuerſę ad rectam & coniungatur.z.c.&.c.t.qñ igitur equalis eſt angulus qui eſt ſub.z.c.t.ei qui eſt ſub.e.g.d.Sed & eſt vt tranſuerſa ad rectam,& quod eſt ſub.e.h.d.ad id quod fit ex.h.g.& quod eſt ſub.z.l.t.ad id quod fit ex.l.c.ſimile igitur.c.z.l.trigonum trigono.e.g.c.&.z.t.c./e.g.d.quare equalis eſt āgulus qui eſt z.c.t.idem.ω.ei qui eſt ſub.e.g.d.

℃Componetur autem ſic,Sit data hyperbole.a.g.axis autem.a.b.centrum autem.e.datus autem acutus angulus. ω.data autem ratio tranſuerſę ad rectam eadē rationi.e.+ ad.e.f.& in duo ſecetur.+.f.ad.y.& ponatur data linia.z.t.& in ipſa deſcribatur ſectio

circuli maior ſemicirculo ſuſcipiens angulum equalem. ω. & ſit.z.t.c. & relictum ſit cẽtrum circuli.n.& ab.n.ad.z.t.cathetus ducatur.n.o.& ſecetur.n.o.ad.p.in rationem y.f.ad.f.e.& per.p.ducatur.p.c.equidiſtans.z.t.& a puncto.c.cathetus ducatur.c.l.ad z.t.productam & coniungatur.z.c.&.c.t.& producatur.l.c.ad.m.& ab.n. ad ipſam cathetus ducatur.n.x.equidiſtans igitur eſt.z.t.& propter hoc eſt vt.n.p.ad.p.o.idem y.f.ad.f.e./x.c.ad.c.l.& dupla vt.†.f.ad.f.e./m.c.ad.c.l.componenti vt.†.e. ad.e.f./m.l.ad.l.c.Sed vt.m.l.ad.l.c.quod eſt ſub.m.l.c.ad id quod fit ex.l.c.vt igitur †.e.ad.e.f.quod eſt ſub.m.l.c.ad id quod fit ex.l.c.idem quod eſt ſub.z.l.t.ad id quod fit ex.l.t.Sed vt.†. e.ad.e.f.tranſuerſa ad rectam, Igitur & vt quod eſt ſub.z.l.t.ad id quod fit ex.l.c.tranſuerſa ad rectam ducatur vtiq; ab.a./a t.ad rectos.a.b.qñ igitur eſt vt quod fit ex.e.a.ad id quod fit ex.a.t.trãſuerſa ad rectam eſt autẽ & vt tranſuerſa ad rectam quod eſt ſub.z.l.t.ad id quod fit ex.l.t.quod autem fit ex.z.l.ad id quod fit ex l.c.maiorem habet rationẽ q̃ quod eſt ſub.z.l.t.ad id quod fit ex.l.c.Igitur & id quod fit ex.z.l.ad id quod fit ex.l.c.maiorem habet rationem q̃ quod fit ex.e.a.ad id quod fit ex.a.t.& ſunt anguli ad.a.l.recti, minor igitur eſt angulus.z.ãgulo.e. Conſtituatur igitur angulus qui eſt ſub.a.e.g.equalis ei qui eſt ſub.l.z.c. Coincidet igitur e.g.ſectioni coincidat ad.g.ducatur autem a puncto.g./g.d.tangens,cathetus autem.g.h.erit vtiq; vt tranſuerſa ad rectam ſic quod eſt ſub.e.h.d.ad id quod fit ex.g.h.& vt igitur quod eſt ſub.z.l.t.ad id quod fit ex.l.c.quod eſt ſub.e.h.d.ad id quod fit ex.g.h.ſimile eſt igitur trigonum.c.z.l.trigono.e.g.h.&.c.t.l./g.h.d.&.c.z.t./g.e.d.quare angulus qui eſt ſub.e.g.d.equalis eſt ei qui eſt ſub.z.t.c.idem.ω.Si vero ratio trãſuerſæ ad rectam equalis ſit ad equale.c.l.tanget.z.c.t.circulum & coniuncta a centro ad.c.equidiſtans erit.z.t.& ipſa faciet problema,



ligata 5664

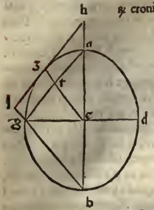
Propoſitio, Quinquageſimaſecunda.

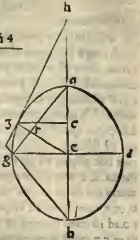
SI defectionem linea tangat, quem facit angulum ad diametrum ductam per tactum non minor eſt angulo deinceps contento ſub iis quæ ſunt ad mediam ſectionem, lineis.

Sit defectio, cuius axes.a.b.&.g.d.centrum autem.e.maior autem ſit axium.a.b.& h.z.l.tangit ſectionem & coniungatur.a.g./.g.b./.z.e.& producatur.b.g.ad.l. Dico ꝙ non minor eſt angulus qui eſt ſub.l.z.e.eo qui eſt ſub.l.g.a.nam.z.e.vel eſt equidiſtans.z.b.vel non ſit prius equidiſtans, &.a.e.eſt equalis.e.b.Igitur &.a.t.equalis.t.g.& eſt diameter.z.e.igitur tangens ad.z.equidiſtans eſt.a.g.eſt autem &.z.e.equidiſtans.l.b.paral'elogrammum igitur eſt.z.t.g.l.& propter hoc equalis eſt qui eſt ſub.l.z.t.ei qui eſt ſub.l.g.t.& quoniam vtraq;.a.e.&.e.b.maior eſt.e.g.amplus eſt qui eſt ſub.a.g.b.Igitur acutus qui eſt ſub.l.g.t.quare & qui eſt ſub.l.z.e.& propter hoc amplus eſt qui eſt ſub.h.z.e.non ſit vtiq;.e.z.equidiſtans.l.b.& ducat cathetus.z.c.non igitur equalis eſt qui eſt ſub.l.b.e.ei qui eſt ſub.z.e.a.rectus autem qui eſt ad.c.recto qui eſt ad.c.eſt equalis, non igitur ſimile eſt trigonum.g.e.b./.z.e.c.non igitur eſt vt quod fit ex.b.e.ad id quod fit ex.g.e.ideſt quod eſt ſub.a.e.b.ad id quod fit ex.e.g.& tranſuerſa ad rectam & quod eſt ſub.h.c.e.ad id quod fit ex.c.z.quod fit ex.c.e.ad id quod fit ex.c.z.non igitur.h.c.eſt equalis.c.e.ponatur circuli ſectio.m.n.y.ſuſcipiens angulum equalem ei qui eſt ſub.a.g.b.amplus autem qui eſt ſub.a.g.b.minor igitur ſemicirculi ſectio eſt.m.y.n.fiat vtiq; vt.h.c.ad c.e./n.x.ad.x.m.& ab.x.ad rectos ducatur.x.y.e.& coniungatur.n.y.&.y.m.ſecetur in duo.m.n.ad.t.& ad rectos ducatur.t.o.p.diameter igitur eſt, Sit centrum.r.& ab ipſo cathetus.r.s.& coniungatur.o.n.&.o.m.quando igitur qui eſt ſub.m.o.n.equalis eſt ei qui eſt ſub.a.g.b.& in duo ſecata eſt vtraq;.a.b.&.m.n.ad.e.&.t.& recti ſunt ad.e.t.anguli ſimilia igitur.o.t.n.&.b.e.g.trigona eſt igitur vt quod fit ex.t.n.ad id quod fit ex.t.e.ſic quod fit ex.b.e.ad id quod fit ex.e.g.& quoniam.t.r.equalis eſt s.x.maior autem.r.o.eſt.s.o.Igitur.r.o.ad.r.t.maiorem rationem habet q̄.y.s.ad.s.x.& conuertenti.r.o.ad.o.t.minorem rationem habet q̄.s.y.ad.y.x.& preeuntium dupla igitur.p.o.ad.o.t.minorem rationem habet q̄.e.y.ad.y.x.& diuidenti.p.t.ad.r.o.minorem habet rationem q̄.e.x.ad.y.x.Sed vt.p.t.ad.t.o.quod fit ex.t.n.ad id quod fit ex.t.o.& id quod fit ex.b.e.ad id quod fit ex.e.g.& tranſuerſa ad rectam, & quod eſt ſub.h.c.e.ad id quod fit ex.c.z.quod igitur eſt ſub.h.c.e.ad id quod fit ex.c.z.minorem rationem habet q̄.e.x.ad.x.y.idem quod eſt ſub.e.x.y.ad id quod fit ex.x.y.idem quod eſt ſub.n.x.m.ad id quod fit ex.x.y.ſi igitur faciamus vt quod eſt ſub.h.c.e.ad id quod fit ex.c.z.ſic quod eſt ſub.n.x.m.ad aliud quid erit maior eo quod fit ex.x.y.ſit ad id quod fit ex.x.f.quando igitur eſt vt.h.c.ad.c.e.ſic n.x.ad.x.m.& ad rectos ſunt.c.z.&.f.x.& eſt vt quod eſt ſub.h.c.e.ad id quod fit ex.c.z.quod eſt ſub.n.x.m.ad id quod fit ex.x.f.per eadem eſt angulus qui eſt ſub.h.z.e.equalis ei qui eſt ſub.m.f.n.maior igitur qui eſt ſub.m.y.n.idem

qui eſt ſub . a . b . g . angulo qui eſt ſub . h . z . e . angulus autem deinceps qui eſt ſub . l . z . t . maior eſt eo qui eſt ſub . l . g . t . non igitur minor eſt qui eſt ſub . l . z . t . eo qui eſt ſub . l . g . t .

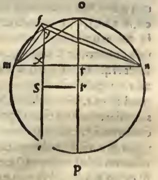
℞ cronica 45589 p̃ ℞ 6889 m̃ 4





℞ ℞ Cronica 4916 p̃ ℞ ligata 381





℞ ℞ Cubica quadrata 4096 p̃ ℞ ligata & ſciolta 13916 p̃ ℞ $\frac{69}{103}$

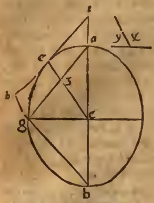
¶Propoſitio, Quinquageſimatertia.

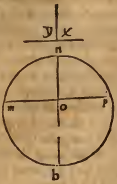
Data defectione tangentem ducere que ad ductam per tactum diametrum angulum faciat equalem dato acuto, oportet vtiq; datum acutum angulum non minorem eſſe angulo deinceps contento ſub lineis ad mediã ſectionem.

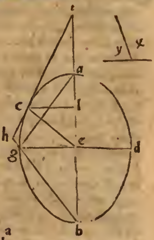
PROPOSITIO LIII.

¶ Sit data deſectio cuius maior axis.a.b. minor autem.g.d. centrum autem.e. & coniungantur.a.g.&.g.b. datus autem angulus ſit.y.non minor eo qui eſt ſub.a.g.h.quare & qui eſt ſub a.g.b.nõ minor eſt.c.igitur.y.vel maior eſt eo qui eſt ſub.a.g.h.vel equalis.ſit prius equalis & per.e.ducatur.e.c.equidiſtans.b.g.& per.c.ducat.c.t.tangens ſectionem quando igitur.a.e.equalis eſt.e.b.& eſt vt.a.e.ad.e.b./a.z.ad.z.g.igitur a.z.equalis eſt.z.g.& eſt diameter.c.e.Igitur tangens ad.c.ſectionem idem.t.c.equidiſtans eſt.g.a.eſt autem &.e.c.equidiſtans.h.b.pararellogrammum igitur eſt.c.z.g.h.& propter hoc equalis eſt angulus qui eſt ſub.c.g.z.ei qui eſt ſub.h.c.z.& qui eſt ſub.h.g.z.dato idem.y.equalis eſt igitur & qui eſt ſub.c.e.equalis eſt.y.ſit vtiq; maior angulus.y.eo qui eſt ſub.a.g.h.econuerſo autem.h.c.eo qui eſt ſub.a.g.b.minor eſt.ponatur circulus & auferatur ab ipſo ſectio & ſit.m.n.p.ſuſcipiens angulum equalem.c.& ſecetur.m.p.in duo ad.o.& ab.o.ducatur.n.o.r.ad rectos m.p.& coniungantur.n.m.&.n.p.angulus igitur qui eſt ſub.m.n.p.eo qui eſt ſub a.g.b.minor eſt.Sed eius qui eſt ſub.m.n.p.dimidius eſt qui eſt ſub.m.n.o.eius vero qui eſt ſub.a.g.b.is qui eſt ſub.a.g.e.minor igitur qui eſt ſub.m.n.o.eo qui eſt ſub.a.g.e.& recti qui ſunt ad.c.o.Igitur.a.e.ad.e.g.maiorem rationem habet q̃ m.o.ad.o.n.quare & quod fit ex.a.e.ad id quod fit ex.e.g.maiorem rationem habet q̃ quod fit ex.m.o.ad id quod fit ex.n.o.Sed quod fit ex.a.e.equale eſt ei qui eſt ſub.a.e.b.quod autem fit ex.m.o.equale eſt ei qui eſt ſub.m.o.p.idem ei qui eſt ſub.n.o.r.quod igitur eſt ſub.a.e.b.ad id quod fit ex.e.g idem tranſuerſa ad rectam maiorem habet rationem q̃.r.o.ad.o.n.fiat vtiq; vt tranſuerſa ad rectam ω.ad.g.& in duo ſecetur.ω.g.a.h.quando igitur tranſuerſa ad rectam maiorem rationem habet q̃.r.o.ad.o.n.igitur.ω.a.ad.a.g.maiorem rationem habet q̃.r.o.ad o.n.& componenti.ω.g.ad.g.a.maiorem rationem habet q̃.r.n.ad.n.o.ſit centrum circuli.f.quare &.h.g.ad.a.g.maiorem habet rationem q̃.f.n.ad.n.o.& diuidenti.a.h.ad.a.g.maiorem rationem habet q̃.f.o.ad.o.n.fiat vtiq; vt.a.h.ad.a.g.ſic.f.o.ad minorem.o.n.vt.i.o.& equidiſtans ducatur.l.x.&.h.x.t.&.b.f.ϯ erit igitur vt.a.h.ad.a.g./f.o.ad.o.i.&.ϯ.s.ad.s.x.& componenti vt.h.g.ad g.a./ϯ.x.ad.x.s.& precentium dupla vt.ω.g.ad.h.a.r.x.ad.x.s.& diuidenti vt ω.a.ad.a.g.idem tranſuerſa ad rectam.t.s.ad.s.x.coniungantur vtiq;.m x.&.x.p.& ponatur ad.a.e.linea puncto.e.ei qui eſt ſub.m.x.p.angulus equalis qui eſt ſub a.e.c.& per.c.ducatur.c.t.tangens ſectionem & ordinate applicetur.c.l.quando igitur equalis eſt angulus qui eſt ſub.m.p.x.ei qui eſt ſub.a.e.c.rectus autem qui eſt ad s.recto qui eſt ad.l.equalis,equangulum igitur eſt.x.s.p.trigonum.c.e.l.trigono,& eſt vt tranſuerſa ad rectam.t.s.ad.s.x.idem quod eſt ſub.t.s.x.ad id quod fit ex.x.s.idem quod eſt ſub.m.s.p.ad id quod fit ex.s.x.ſimile igitur eſt trigono.c.t.l./m.s.x.&.c.t.e./m.x.p.& per hoc equalis eſt angulus qui eſt ſub.m.x.p.ei qui eſt ſub.t.c.e.qui vero eſt ſub.m.x.p.ei qui eſt ſub.m.n.p.eſt equalis idem.e.Igitur & qui eſt ſub.t.c.e.equalis eſt.e.Igit & angulus deinceps qui eſt ſub.h.c.e.ãgulo deinceps.y.eſt eq̃lis,ducta eſt igitur ſectionem tangens.h.t.ad diametrum.c.e.per tactum ductam faciẽs

angulum qui eſt ſub.h.c.e,equalem dato.y.quod oportebat facere.



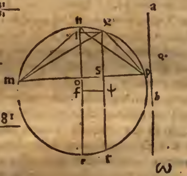




℞ Cubica .4096 p̃ ℞ $\frac{41}{51}$

℞ prolata 681 p̃ ℞ $\frac{91}{105}$

℞ ligata 4916 p̃ ℞ 13881



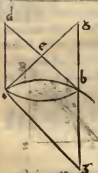
Explicit Liber Secundus.

INCIPIT LIBER TERTIVS APOLLONII PERGEI CONICORVM.

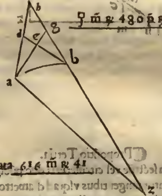
ℂPropoſitio, Prima.

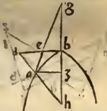
SI Coni ſectionem vel circuli circunferētiam lineę attigant, Ducantur autem per tactus diametri coicidētes tangentibus, erūt eq̄lia ſecundū ſumitatē trigona.

ℂSit Coni ſectio vel circuli circunferentia.a.b.& .a.b.tangant.a.g.& .b.d.coincidentes ad.e.& ducantur per.a.& .b.diametri ſectionis.g.b.& .d.a.coincidētes tangentibus ad.g.& .d. Dico ꝙ equale eſt.a.d.e.trigonum.e.b.g.trigono. Ducatur.n.ab a.ad.b.d./a.z.ordinate igitur applicata eſt, Erit vtiq; in parabole equale.a.b.d.z.parallelogrāmum.a.g.z.trigono, & ablato cōmuni.a.e.b.z.reliquum trigonum.a.d.e.equale eſt.g.b.e.trigono: In reliquis autem coincidant diametri ad centrum.h.qñ igitur applicata eſt.a.z.& .a.g.tangit, quod eſt ſub.z.h.g.equum eſt illo quod fit ex.b.h.eſt igitur vt.z.h.ad.h.b./b.h.ad.h.g.igitur & vt.z.h.ad.h.g.qđ fit ex.z.h.ad illud quod fit ex.h.b. Sed vt quod fit ex.z.h.ad id quod fit ex.h.b.ſic.a.h.z.ad.d.h.b. vt autem z.h.ad.g.h.ſic.a.h.z.ad.a.h.g.igitur & vt.a.h.z.ad.a.h.g.ſic.a.h.z.ad.d.h.b.equum eſt igitur.a.h.g./d.h.b.auferatur autem commune.d.h.g.e.a.b.h.e.reliquum vtiq; trigonum.a.e.d.equale erit.g.e.b.



ꝗ m̃ ℞ 480 p̃ ℞ 3509 m̃ 8 p̃ ℞ 56/85





℞ ligata 616 m ℞ 41

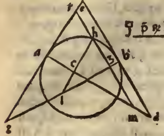
℞ ℞ ligata 4689 p̃ ℞ 18 m̃ ℞ 888 p̃ ℞ 191/345

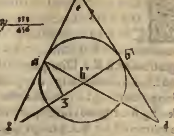
ℂPropoſitio, Secunda.

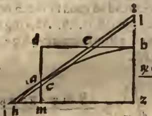
IIſdem ſubiectis ſi in Coni ſectione vel circuli circunferētia relictum ſit quodam punctum, & per ipſum equidiſtantes ducantur tangentibus vſq; ad diametros factum quadrilaterum ad vnam tangentium & vni diametro equale erit facto trigono ad eandem tangentem & alteri diametro.

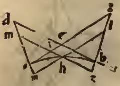
ℂSit.n.Coni ſectio vel circuli circunferentia.a.b.& tangentes.a.e.g.& .b.e.d.diame

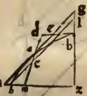
tri autem. a.d.&.b.g.& relictum ſit quodam punctum in ſectione quod ſit.h.& ducantur ad tangentes.h.c.l.&.h.m.z. Dico q̧ equale eſt.a.i.m.trigonum.g.h.quadrilatero: qñ.n.demonſtratū eſt.h.c.m.trigonū quadrilatero.a.l.equale eſſe cōmune apponatur vel auferatur.i.o.quadrilaterū & ſit.a.i.m.trigonū equale quadrilatero.g.h.







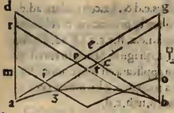




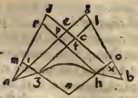
Propoſitio Tertia.

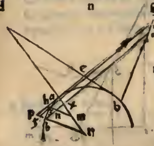
HIſdem ſubiectis ſi in ſectiōe vel circūferētia duo pūcta relicta ſint & per ipſam equidiſtantes ducantur tangentibus vſq; ad diametros facta ſub ductis quadrilatera producta ad diametros equalia erunt inuicem.

Sit.n.ſectio & tangentes & diametri vt prius dictum eſt & relictum ſit in ſectiōe duo contingentia puncta.z.&.h.& per.z.tangentibus equidiſtantes ducantur.z.t.c.l.&.n.z.i.m.per.h.autem.h.x.o.&.h.t.p.r. Dico q̧ equale eſt quadrilaterum.l.h.m.t./&.l.n./t.n.qñ.n.demonſtratum eſt equale.r.p.a.trigonum quadrilatero.g.h.&.a.m.i.g.z.&.a.r.p.maius eſt.a.m.i.quadrilatero.p.m. Igitur &.g.h. maior eſt.g.z.quadrilatero m.p.quare.g.h.equale eſt.g.z.&.p.m.ideſt.g.t.&.t.z. Commune auferatur.g.t.reliquum igitur.l.h.equale eſt.t.m.& totum igitur.l.n.equale eſt.r.n.

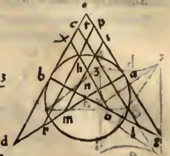


ꝗ p̃ ℞ 49 1/4 m̃ ℞ 61/91





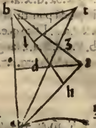
℞ quadra 512 m̃ 463



¶ Propoſitio, Quarta.

SI contrapoſitas duo lineæ tangentes inuicem coincidant, ducatur autem per tactus diametri coincidentes tangentibus equalia erunt trigona ad tangentes. ¶ Sint contrapoſitæ. a. & .b. tangentes autem ipſas. a. g. & .b. g. coincidant ad. g. centrum autem ſit ſectionum. d. coniungantur autem, d. a. & .b. d. & producantur ad z. & .h. Dico q̃ equale eſt. a. h. d. trigonum. b. d. z. & .a. g. z. b. g. h. ducatur. n. per. t. ꝛ. l. tangens ſectionem equidiſtans igitur eſt. a. h. & quoniam equalis eſt. a. d. d. t. equale etiam erit. a. h. d. trigonum. t. l. d. Sed. d. t. l. equale eſt. b. d. z. Igitur & .a. h. d. equale eſt b. d. z. quare & .a. g. z. equale eſt. b. g. h.

ꝗ ꝗ p̃ ℞ cuba 64 m̃ ℞ 68[1]



℞ ſciolta de ꝗ p̃ ℞ 4468[1]

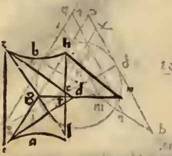
℞ ligata 8889 m̃ ℞ 688[1]

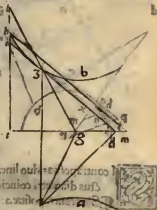
℞ Cronica de ꝗ ꝗ p̃ ℞ 484

¶ Propoſitio, Quinta.

SI contrapoſitas duo lineę tangentes coincidant & relictum ſit in vtrauis ſectionum punctum quodam & ab ipſo ducantur duo lineæ hæc quidem ad tangentem, Illa vero ad tactus coniungẽtem factum ſub ipſis trigonum ad ductam diametrum per contactionem differt a recepto trigono ad contactionem tangentium per receptum trigonum ad tangentem & ductam per tactum diametrum.

¶Sint contrapoſitę.a.&.b.quarum centrum.g.& tangentes.e.d.&.d.z.coincidant ad.d, & cōiungat̃.e.z.&.g.d.& producat̃ &.z.g.&.e.g.cōiunctę producātur & relictum ſit quodam punctū.h.in ſectione & per ipſum ducatur ad.e.z.h.t.c.e,l.& ad.d.z.h.m.Dico q̃.h.t.m.trigonum differt a.e.t.d.trigono.e.l.z.qm̃ igitur demonſtrata eſt.g.d,diameter cōtrapoſitarū.e.z.vero ordinate ad ipſam applicata eſt & hęc quidē.h.t.ad.e.z.Illa vero.m.h.ad.d.z.Igitur trigonum.m.h.t.a triangulo.g.l.t.differt per.e.z.l.& manifeſtum q̃ equale ſit trigonum.e.z.l.quadrilatero.m.h.e.d.



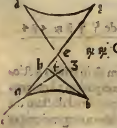


℥ ℥ p̃ ℞ 8899 m̃ ℞ cuba 64 p̃ ℞ ℞ ligata 481

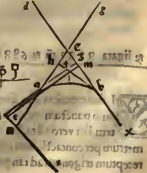
¶Propoſitio,Sexta.

Iſdem ſubiectis Si in vna contrapoſitarum relictum ſit quodam punctum & ab ipſo equidiſtantes ducantur tangentibus coincidantq̃ tangentibus & diametris factum ſub ipſis quadrilaterum ad vnam tangentium & vni diametro,equale erit facto trigono ad eandem tangentem & alteri diametro.

¶Sint cōtrapoſitę quarū diametri.a.e.g.&.b.e.d.&.a.b.ſectionē tangāt.a.z.&.b.h.coincidēres inuicē ad.t.relictū autē ſit quodā punctū in ſectiōe quod ſit.c.& ab ipſo tangentibus eq̃diſtātes ducātur.c.l.m.&.c.n.x.Dico q̃.e.z.quadrilaterū equale eſt trigono.a.i.n.qm̃ igitur contrapoſitæ.a.b.&.g.d.&.a.z.tangit a.b.coincidens.b.d.& ad.a.z.ducta eſt.c.l.eq̄le eſt.a.i.n.trigonū quadrilatero.c.z.

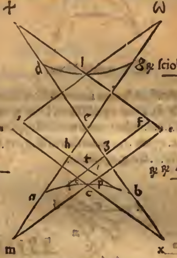


℞ ℞ Cronica de ℥ ℥ m̃ ℞ 4846 p̃ ℥



Propoſitio, Septima.

Iſdem ſubiectis, Si in vtraq; ſectionum puncta quedam relicta ſint & ab ipſis equidiſtantes ducantur tangentibus coincidentes tangentibus & diametris, facta ſub ductis quadrilatera producta autem ad diametros equalia erunt inuicem, ſupponantur.n.predicta & relicta ſint in vtraq; ſectionum puncta.c.&.l.& ab ipſis ad.a.z. ducantur.m.c.p.r.c. &.n.s.t.l. ω.ad.b.h. autem.n.i.o.c.x.&.e.f.y.l.+. Dico q; erunt que prepoſita ſunt.qñ.n. trigonum.a.o.i.equale eſt quadrilatero.r.o. Commune ponatur.e.o.totum igitur.a.e.z.trigonum equale eſt.c.e.eſt autem &.b.e. h.trigonum equale quadrilatero.l.e.& eſt.a.e.z.trigonum equale.b.h.e.Igitur &.l.e. equale eſt.i.c.r.e. Cōmune apponatur.n.e.totum igitur.t.c.equale eſt.i.l.g.C.y./R.l.



℞ ligata de ♀ p̄ 42—1/4

8℞ sciolta de ♀ & ligata de ♀ ♀

℞ 4887 p̄ ♀ m̄ 84 1/7

℞ ℞ 4899 m̄ ℞ ♀ p̄ ℞ 64/94

Propoſitio, Octaua.

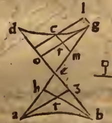
Iſdem ſubiectis relinquatur in.c.l.puncta.g.d.ad que coīcidunt diametri ſectionibus & per ipſam ducātur equidiſtātes tāgētibus. Dico q; equale eſt.d.b.quadrilaterū.z.g.&.x.i./o.t.qñ.n.equale demonſtratū eſt.a.h.t.trigonū.t.b.z.&.ab a.ad.b.equidiſtās ei que eſt ab.h.ad.z.proportionabile igit̃ eſt vt.a.e.ad.e.h./b.c.ad.e. z.& conuertenti vt.e.a.ad.a.h./e.b.ad.b.z.eſt autem & vt.g.a.ad.a.e./d.b.ad.b.e. vtraq;.n.vtriuſq; dupla, per equum igitur vt.g.a.ad.a.h./d.b.ad.b.z.& ſunt ſimilia trigona per equidiſtantes. Vt igitur.g.t.a.trigonum ad.a.t.h./x.b.d.ad.t.b.z.& viciſſim equale autem.a.h.t./t.z.b.equale igitur &.t.a.g./d.b.x.quorum.a.h.t.equale demonſtratum eſt.t.b.z.reliquum igitur.d.t.quadrilaterum equale.g.t.quare &.d.b./g. z.& quoniam equidiſtans eſt.g.o./a.z.equale eſt.g.o.c.trigonum.a.e.z.ſimile autem & d.e.i./b.e.h.Sed.b.e.h.equale.a.e.z. Igitur &.g.a.c.equale eſt.d.e.i.eſt autem &.h.d. quadrilaterum.z.g.totum igitur.x.i.equale eſt.o.t.



℞ de ꝗ ꝗ p̄ ℞ 39 $\frac{1}{4}$ m̄ ℞ 86 ꝗ p̄ ℞ cronica de ꝗ ꝗ m̄ 40

ℂPropoſitio, Nona.

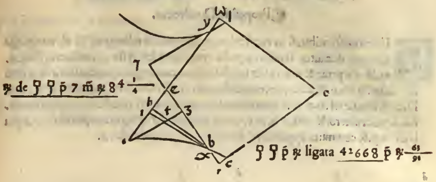
EIſdem ſubiectis ſi alterũ pũctorum inter videlicet diametros vt.c. alterũ autem vni.g.d. idẽ vt.g. & ducantur equidiſtãtes. Dico ꝙ equale eſt.g.e.o. trigonum quadrilatero.c.e.&.l.o./.l.m. hoc autem manifeſtũ, qñ.n. equale demõſtratũ eſt.g.e.o. trigonũ.a.e.z. & a.e.z. equale.c.e. quadrilatero & .g.e.y. equale.c.e. quadrilatero, quare &.g.r.m. equale eſt.c.o.&.c.g. equale.l.o.



℞ ligata de ꝗ p̄ ℞ 4600 ꝗ ꝗ p̄ ℞ Cuba 512 p̄ ℞ $\frac{48}{65}$

ℂPropoſitio, Decima.

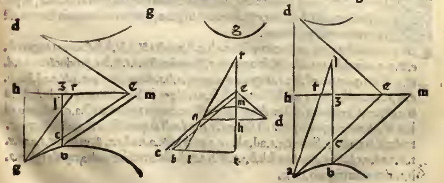
EIſdem ſubiectis relicta ſint.c.l. pũcta nõ ad quod coincidunt diametri ſectionibus, demõſtrandum ꝙ equale eſt.l.7.r.e. quadrilaterum.(ω).e.c.i. quadrilatero, qñ.n. tãgũt.a.z.&.b.h.& per tactus diametri sũt.a.e.&.b.e.& ad tãgẽtes ſunt l.t.&.c.i. maius eſt.t.y.e. trigonũ.y.(ω).l. trigono.e.z.a. ſimiliter autem &.x.e.i. maior eſt.x.r.c. trigono.b.e.h. equale autem.a.e.z./.b.e.h. eodẽ igitur ſuperat.t.e.y./.y.(ω).l. &.x.e.i./.x.r.c. igitur.t.y.e. cũ.x.r.c. equale eſt.x.e.i. cũ.y.(ω).l. Cõmune apponãtur.c.x.e.y.l.e. Igitur.l.t.r.e. quadrilaterũ equale eſt.ω.e.c.i. quadrilatero.



Propoſitio, Vndecima.

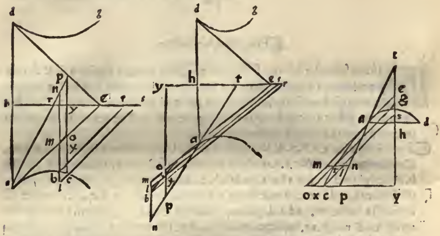
EIſdem ſubiectis ſi in vtra ſectionum punctum quodam relictum ſit & ab ipſo equidiſtantes ducantur, altera quidem ad tangentem altera ad tactus coniungentem, factum ſub ipſis trigonum adductam per contactionem tangentium diametrum differt a recepto trigono ad tangentem & ductam per tactũ diametrum recepto trigono ad contactionem tangentium.

Sint cõtrapoſitæ.a.b.&.g.d. & tangentes.a.e.&.d.e.coincidant ad.e.& ſit centrum.t. & coniungantur.a.d.&.e,t.h.relictum ſit autem in ſectione.a.b.contingens punctũ b.& per ipſum ducantur ad.a.h.quidem.b.z.l.ad.a.e.autem.b.m.dico q.b.z.m.trigonũ differt ab.a.c.l./.c.e.z.manifeſtũq; q.a.d.in duo ſecat ab.e.t. & q.e.t.diameter eſt coniuncta ductæ per.t.ad.a.d.quare applicata eſt.a.b.ad.e.h.quoniam igitur diameter eſt.h.e.& tangit.a.e.applicata autem eſt.a.h.relicto autẽ in ſectione puncto.b.ducantur ad.e.h.duo lineę.b.z.quidem ad.a.h./b.m.vero ad.a. .manifeſtum q.b.m.z.trigonum differt a.c.t.z./t.a.e.quare & .b.z.m.differt ab.a.c.l./c.z.e.& ſimul demonſtratum eſt q.b.c.e.m.quadrilaterum equale eſt.l.c.a.trigono.



¶Propoſitio, Duodecima.

EIſdem exiſtentibus ſi in vna ſectionum duo puncta relinquant̄ & ab vtroq; eq̄diſtantes ducantur ſimiliter equalia erunt facta ſub ipſis quadrilatera, Sint.n. eadē que prius & relicta ſint in.a.b.ſectione contingētia puncta.b.&.c.& ꝑ ipſã ducantur.b.l.m.n.&.c.x.o.y.p.equidiſtantes.a.d.&.b.x.r.&.c.l.s.equidiſtantes.a.e. Dico ꝙ equale eſt.b.p./c.r.quando.n.demonſtratum eſt equale.a.o.p.trigonum.h.o.e.s.quadrilatero,&.a.m.n./b.m.e.r.reliquũ igitur.c.r.reliquo accipiendo.b.o.equale eſt.m.p.& communi appoſito vel ablato.b.o./b.p.equale eſt.x.s.



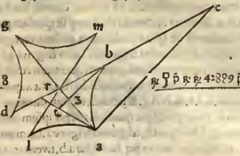
¶Propoſitio, Decimatertia.

SI in cõtrapoſitis ad cõiunctionē, deiceps ſectiões lineę tãgentes coicidãt, & per tactus diametri ducantur, equalia erunt trigona, quorum communis ſumitas eſt centrum contrapoſitarum.

¶Sint coniunctæ contrapoſitæ in quibus.a.b.g.d.puncta &.a.&.b.ſectiones tangant.b.e.&.a.e.coincidentes ad.e.& ſit centrum.t.& coniunctæ.a.t.&.b.t.producãtur ad.d.&.g.Dico ꝙ equale eſt.b.z.t.trigonum trigono.a.h.t.ducantur.n.per.a.&.t.ad.b.e./a.c.&.t.l.m.qñ igitur tangit ſectionem.b./b.z.e.& per tactum diameter eſt.d.t.b.& ad b.e.eſt.l.m.Coniuncta eſt.l.m.diameter, poſt hoc autem applicata eſt.a.c.ordinate ad b.d.&.a.h.tangit quod igitur eſt ſub.c.t.h.equale eſt ei quod fit ex.b.t.eſt igitur vt.c.t.ad.t.b./b.t.ad.h.t.Sed vt.c.t.ad.t.b./c.a.ad.b.z.&.a.t.ad.t.z.& vt igitur.a.t.ad.z.t./b.t.ad.c.t.& ſunt quæ ſunt ſub.b.t.z.&.h.t.z.duobus rectis equales, equale igitur.a.h.t.trigonum trigono.b.t.z.

ʒ p̄ ℞ 3863 m̄ ℞ ligata 488 p̄ ℞ ſciolta 1516 p̄ ℞ ℞ cubica quadrata 512 p̄ 8

ʒ ʒ p̄ ℞ 83 $\frac{1}{4}$ m̄ ℞ 15689 p̄ 8



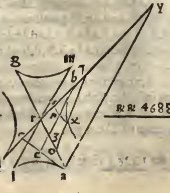
℞ ʒ p̄ ℞ ℞ 42889 p̄ ℞ $\frac{49}{23}$

Propoſitio, Decimaquarta.

IIſdem ſubiectis, Si in vtranq; ſectionum punctum quodam relictum ſit & ab ipſo equidiſtantes ducantur tangentibus vſq; ad diametros, factum ad cētrum trigonum a facto circa eundem angulum triágulo differt trigono baſim haben ti tangentem ſumitatem vero centrum.

Sint alia quidem eadem, relictum autem ſit in ſectione. b. quodam punctũ. x. & ipſum ad. a. h. quidem ducatur. x. r. s. ad. b. e. vero. x. o. t. Dico q. o. t. ꝗ. trigonum ab. x. s. ꝗ. differt. r. b. z. Ducatur. n. a. o. a. ad. b. z. /a. y. qñ igitur per eadem que prius ſectionis. a. l. diameter eſt. l. t. m. Coniuncta autem & ſecunda diameter eſt. d. r. g. & ab. a. tangit. a. h. applicata autem eſt ad. l. m. /a. y. habebit. a. y. ad. y. h. compoſitam rationem, Ex ratio ne quam habet. t. y. ad. y. a. & ex ea quam habet ad. l. m. ſpeciei tranſuerſum latus ad re ctum, Sed vt. a. y. ad. y. h. /x. ꝗ. ad. ꝗ. e. vt autem. t. y. ad. y. a. /t. ꝗ. ad. t. o. & r. b. ad. b. z. vt autem ad. l. m. ſpeciei tranſuerſum latus ad rectum ad. b. d. tranſuerſum ad rectum, habebit igitur. x. ꝗ. ad. ꝗ. s. Compoſitam rationem ex ea quam habet. r. b. ad. b. z. ideſt t. ꝗ. ad. ꝗ. o. & ea quam habet ad. b. d. ſpeciei rectum latus ad tranſuerſam & per de mõſtrata in. 41. primi libri. ꝗ. t. o. trigonũ ab. x. t. s. differt. b. z. r. q̃re & trigono. a. c. t.

℞ cuba de ʒ ʒ p̄ ℞ $\frac{15}{81}$ ʒ ℞ 512



℞ ℞ 4688 p̄ 24 m̄ ℞ $\frac{43}{61}$

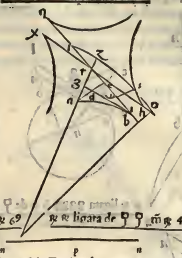
Propoſitio, Decimaquinta.

SI vnam contrapoſitarum ad coniunctionem lineæ tangentes coincidant & per tactus diametri ducantur relictumq; ſit quodam punctum in vtra coniũctarum ſectionum & ab ipſo equidiſtantes ducantur tangentibus vſq; ad diametros factum ſub ipſis ad ſectionem trigonum facto trigono ad centrum maius eſt trigono baſim habenti tangentem ſumitatem vero centrum contrapoſitarum.

Sint ad coniunctionem contrapoſitæ.a.b./h.s.&.r x.quarum centrum.t.& ſectionem a.b.tangant.a.d.e.&.b.d.g.& per.a.b.tactum ducantur diametri.a.t.z.&.b.t.& relictum ſit in ſectione punctum quodam.s.& per ipſum ducatur ad.b.g.quidem,s.z.l.ad a.e.autem.s.y. Dico ꝙ.s.l.y.trigonum trigono.t.l.z.maius eſt.t.g.b. ducatur.n.per.t. ad.b.g./x.t.h.ad.a.e.autem per.h./.c.i.h.ad.b.t.vero/s.o.manifeſtum ꝙ coniuncta eſt x.h.diameter.b.t.& ꝙ.s.o.equidiſtans exiſtens.b.ˀ.applicata eſt ordinate ad.t.h.c.& ꝙ parallelogrãmum eſt.s.l.t.o.qñ igitur tangit.b.g.& per tactum eſt.b.t. & altera tangens eſt.a.e.fiat vt.d.b.ad.b.e./m.n.adduplam.b.g. Igitur.m.n.eſt vocata recta ſpeciei ad.b.ˀ.in duo ſecetur.m.n.ad.p.eſt igitur vt.b.d.ad.b.e./m.p.ad.b.g.fiat vtiq; vt.x.h.ad.ˀ.b./ˀ.b.ad.r.erit vtiq; &.r.vocata recta ſpeciei ad.x.h.qñ igitur eſt ut.d.b.ad.b.e./m.p.ad.g.b. Sed ut.d.b.ad.b.e.quod fit ex.d.b.ad id quod eſt ſub.d.b.e. ut uero.m.p.ad.g.b.quod eſt ſub.m.p./b.t.ad id quod eſt ſub.g.b.t.ut igitur quod fit ex.d.b.ad id quod eſt ſub.d.b.e.quod eſt ſub.p.m.b.t.ad id quod eſt ſub.g.b.t.equale autem quod eſt ſub.m.p.b.t.ei quod fit ex.t.h.propterea quod fit ex.x.h.equale eſt ei quod eſt ſub.ˀ.b.m.n.& quod eſt ſub.m.p.b.t.quartum eius quod eſt ſub.ˀ.b.m.n. quod autem fit ex.h.t.quartum eius quod fit ex.h.x.eſt igitur ut quod fit ex.d.b.ad id quod eſt ſub.d.h.e.quod fit ex.h.t.ad id quod eſt ſub.g.b.t. uiciſſim ut quod fit ex.b.d.ad id quod fit ex.h.t.quod eſt ſub.d.b.e.ad id quod eſt ſub.g.b.t.Sed ut quod fit ex d.b.ad id quod fit ex.t.h.trigonum.d.b.e.ad.h.t.i.ſimilia.n.ut autem quod eſt ſub.d.b.e.ad id quod eſt ſub.g.b.t.trigonum.d.b.e.ad.g.b.t.ut igitur.d.b.e.$\triangle^{mi}$ad.h.t.i./d.b.e.ad.g.b.t.equale igitur eſt.h.t.i./g.b.t.Igitur.h.t.c.trigonum ab.t.i.c.differt t.h.i.idem.g.b.t.rurſus quoniam.t.b.ad.b.g.compoſitam habet rationem ex ea quam habet.t.b.ad.m.p.&.m.p.ad.g.b.Sed vt.t.b.ad.m.p./ˀ.b.ad.m.n.&.r.ad.x.h.vt autem.m.p.ad.b.g./d.b.ad.b.e.habebit igitur.t.b.ad.b.g.compoſitam rationem ex ea quam habet.d.b.ad.b.e.&.r.ad.x.h.& quoniam equidiſtans eſt.b.g.ad.s.l.& ſimile.t.g.b.trigonum.t.l.z.& eſt vt.t.b.ad.a.b./t.l.ad.l.z.habebit igitur.t.l.ad.l.z.compoſitam rationem ex ea quam habet.r.ad.x.h.&.d.b.ad.b.e.idem.t.h.ad.t.i.qñ igitur hyperbole eſt.h.s.diametrum habens.x.h.rectam autem.r.& a quodam puncto.s.ducta eſt.s.o.& deſcripta eſt ex ea quidem que ex centro.s./t.h.ſpecies.t.i.h.ab.applicata vero.s.o.vel.t.l.equali ipſi.t.l.z.& ab.t.o.inter centrum & applicatam vel.s.l.equalem ipſi ſpecies ſimilis ei que fit ex centro.s./t.i.h.& habet compoſitam rationẽ vt dictum eſt.s.l.y.trigonum maius eſt.t.l.z./t.g.b.

℞ ℞ cubica quadrata 18863 m̃ ℞ ligata 49912 m̃ ℞ ℞ 5884 p̃ ℞ $\frac{95}{143}$

℞ cuba de ϡ p̄ ℞ 14513 m̄ ℞ $\frac{49}{85}$



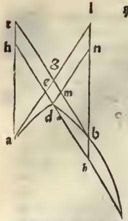
℞ ℞ cubica quadrata de ϡ ϡ p̄ ℞ 69 ℞ ℞ ligata de ϡ ϡ m̄ ℞ 4889 p̄ ℞ 15616

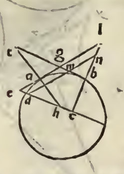
ℂ Propoſitio, Decimaſexta.

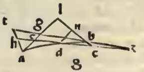
SI Coni ſectionem vel circuli circunferentiam duo lineæ tangentes coincidant a quodam vero puncto eorum que ſunt in ſectione ducta eſt linea ad quãdam tangentium ſecans ſectionem & alteram tangentium erit vt que fiunt a tangentibus tetragona ad inuicem, ſic contẽta ſuperficies ſub eã que eſt inter ſectionem & tangentem ad id quod fit ex recepta ad tactum tetragonum.

ℂ Sit Coni ſectio vel circuli circunferentia.a.b.& tangant ipſam.a.g.&.g.b.coincidentes ad.g.& relictum ſit quodam pũctum in ſectione.a.b.quod ſit.d.& per ipſum ducatur ad.g.b.e.d.z. Dico q̃ eſt vt quod fit ex.b.g.ad id quod fit ex.a.g.ſic quod eſt ſub z.e.d.ad id quod fit ex.e.a.ducantur.n.per.a.b.diametri/a.h.t.&.b.c.l.per.d.vero.d.m.n.equidiſtans.a.l.manifeſtum inde q̃.d c.equalis eſt.c.z.&.a.e.h.trigonum quadrilatero.l.d.&.b.l.g.trigonum/a.g.t.qñ igitur.z.c.eſt equalis.c.d.& adiacet.d.e.quod eſt ſub.z.e.d.cum eo quod fit ex.d.c.equale eſt ei quod fit ex.c.e.& quoniam ſimile eſt e.l.c.trigonum.d.n.c.eſt vt quod fit ex.e.c.ad id quod fit ex.c.d.ſic.e.c.l.trigonum,ad d.n.c.& inuicem & vt totum quod fit ex.e.c.ad totum.e.l.c.trigonũ ſic ablatum quod fit ex.d.c.ad ablatum.d.n.c.trigonum & reliquum igitur quod eſt ſub.z.c.d.ad reliquum.d.n.eſt vt quod fit ex.c.c.ad.e.l.c.trigonum. Sed vt quod fit ex.e.c.ad.e.l.c.ſic quod fit ex.g.b.ad.l.g.b.& vt igitur quod eſt ſub.z.e.d.ad.d.l.quadrilaterum, quod fit ex.g.b.ad.l.g.b.trigonum,equale autem.d.l.trigono.a.e.l.&.l.g.b./a.t.g.& vt igitur quod eſt ſub.z.e.d.ad.a.e.h.trigonum quod fit ex.g.b.ad.a.t.g.viciſſim vt quod eſt ſub.z.e.d.ad id quod fit ex.g.b.trigonum.a.h.e.ad.a.t.g.vt autem.a.e.h.ad.a.t.g.quod fit ex.e.a.ad id quod fit ex.a.g. Igitur & vt quod eſt ſub.z.e.d.ad id quod fit ex g.b.quod fit ex.e.a.ad id quod fit ex.a.g.& viciſſim.

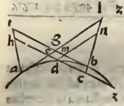
℞ ℞ Cubica quadrata 80981 p̃ ℞ ligata de ꝗ ꝗ p̃ 18

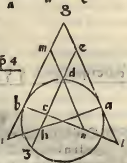






℞ ℞ ligata 8888 p̃ ℞ de ꝗ ꝗ p̃ 4





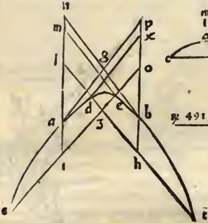
ℂPropoſitio, Decimaſeptima.

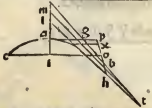
SI Coni ſectionem uel circuli circunferentiam duo lineæ tangentes coincidant re licta autem ſint in ſectione duo contingentia puncta & ab ipſis ducantur in ſe ctione ad tangentes ſecantes inuicemq; & lineam, erit ut que fiunt ex tangenti bus tetragona ad inuicem, ſic contentum ſub his que inter ſectionem & contactionem linearum ad contentum ſub ſimilibus acceptis lineis.

ℂSit Coni ſectio uel circuli circunferentia. a. b. & . a. b. tangentes ſint. a. g. & . g. b. coinci dentes ad. g. & relicta ſint in ſectione contingentia puncta. d. & . e. & per ipſam ad. a. g. & . g. b. ducantur. e. z. i. c. & . d. z. h. t. Dico q; eſt ut quod fit ex. a. g. ad id quod fit ex g. b. quod eſt. ſub. c. z. e. ad id quod eſt ſub. t. g. d. ducantur. n. per. a. & . b. diametri. a. l. m. n. & . b. x. o. p. & producantur tangenteſq; & equidiſtantes uſq; ad diametros & du cantur ab. d. & . e. ad tangentes. d. x. & . e. m. manifeſtum utiq; q; . c. i. eſt equalis. i. e. & . t. h. h. d. qñ igitur. c. e. ſecata eſt per equa ad. i. in inequalia vero ad. z. quod eſt ſub. c. z. e. cum eo quod fit ex. z. i. equale eſt ei quod fit ex. e. i. & quoniã ſimilia ſunt trigona per equidiſtantes, eſt vt totum quod fit ex e. i. ad totum. i. m. e. trigonum ſic ablatũ quod fit ex. i. z. ad ablatum. z. i. l. trigonum, & reliquũ igitur quod eſt ſub. c. z. e. ad reliquum z. m. quadrilaterum eſt vt totum qđ fit ex. e. i. ad totum. m. e. i. trigonum, Sed vt quod fit ex. e. i. ad. i. e. m. trigonum, quod fit ex. g. a. ad. g. a. n. vt igitur quod eſt ſub. a. z. e. ad. z. m. quadrilaterum ſic quod fit ex. a. g. ad. a. g. n. equale autem. a. g. n. g. p. b.

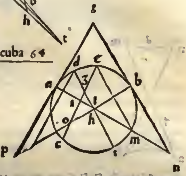
&.z.m./x.z. vt igitur quod eſt ſub.c.z.e.ad.z.x. quod fit ex.a.g.ad.g.b.p.ſimiliter vtiq; demonſtrabitur & vt quod eſt ſub.t.z.d.ad.x.z.ſic quod fit ex.g.b.ad.g.b.p.qñ igitur eſt vt quod eſt ſub.c.z.e.ad.z.x.quadrilaterum quod fit ex.a.g.ad.g.b.p.ex conuerſo autem vt.z.x.quadrilaterum ad id quod eſt ſub.t.z.d./p.b.ad id quod fit ex.g.b. per equa igitur vt quod fit ex.a.g.ad id quod fit ex.g.b.quod eſt ſub.c.z.e.ad id quod eſt ſub.t.z.d.

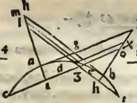
n ℞ de ℈ m̃ ℞ 8233 p̄ ℞ de ℈ ℈ m̃ 40





℞ 4913 p̄ ℞ cuba 64





℞ ℞ cubica quadrata de ℈ p̄ 4

℞ 4684 p̄ ℞ ligata de ℈ p̄ 4

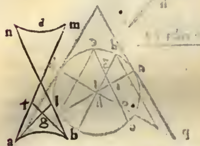
ℭPropoſitio,Decimaoctaua.

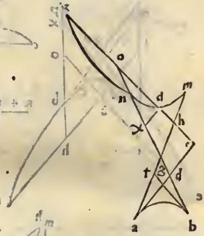
SI cõtrapoſitas duo lineę tangẽtes coincidant & relictũ ſit quodã punctũ in vtrauis ſectionũ & ab ipſo ducatur quedã linea ad quandã tãgentiũ ſecãs ſectionẽ & alterã tãgentẽ erit vt quę fiunt ex tangẽtibus tetragona ad inuicẽ,ſic cõtentũ ſub his que ſunt inter ſectionẽ & tangentem ad id quod fit ex recepta tetragonum.

ℭSint contrapoſitę.a.b.&.n.m.i.& relictum ſit in ſectione.m.cõtingens punctũ.b.& p ipſum ducať.d.e.z.ad.b.g. Dico q; eſt vt qđ fit ex.b.g.ad id quod fit ex.g.a.quod eſt ſub.z.e.d.ad id quod fit ex.a.e.ducať.n.p.d./d.x.eqdiſtãs.a.e. qñ hyperbole eſt.a.b.& diameter ipſius.b.n.& tangens.b.t.&.d.z.equidiſtãs.b.t.equalis igitur eſt.z.o./o.d.& adiacet.e.d. qđ igitur eſt ſub.z.e.d.cũ eo quod fit ex.d.o.equale eſt ei quod fit ex.e.o. & quoniã.e.l.equidiſtans eſt.d.x.ſimile eſt.e.o.l.trigonum.d.x.o.& eſt vt totum quod

fit ex.e.o.ad.e.o.l.ſic ablatum quod fit ex.d.o.ad ablatum.x.d.o.trigonum & reliquum igitur quod eſt ſub.d.e.z.ad.d.l.quadrilaterum eſt vt quod fit ex.e.o.ad.e.o.l. Sed vt quod fit ex.o.e.ad.e.l.o.trigonum, quod fit ex.b.g.ad.b.g.l.trigonum & vt igitur quod eſt ſub.z.e.d.ad.d.l.quadrilaterum, quod fit ex.b.g.ad.b.g.l.trigonum, equale autem.d.l.quadrilaterum trigono.a.e.h.& .b.l.g.a.g.t.vt igitur quod eſt ſub.z.e.d.ad.a.e.h.quod fit ex.b.g.ad.a.g.t.eſt autem & vt.a.e.h.ad id quod fit ex.e.a.ſic a.g.t.ad id quod fit ex.a.g.per equum igitur eſt vt quod fit ex.b.g.ad id quod fit ex.g.a.quod eſt ſub.z.e.d.ad id quod fit ex.e.a.

R R Cubica quadrata de ... m̄ R 816





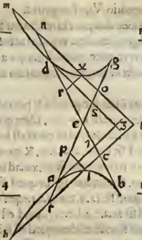
R R ſciolta de ... p̄ 49 m̄ R 63 $\frac{441}{594}$

ℂPropoſitio, Decimanona.

SI contrapoſitas duo lineę tangentes coincidant, ducantur autē equidiſtantes tangentibus inuicem ſecantes, & ſectionem. Erit vt tangentium quadrata ad inuicem ſic contentum ſub his que ſunt inter ſectionem & contactionem linearum ad contentum ſub ſimiliter acceptis lineis.

ℂSint contrapoſitæ quarum diametri.a.g.&.b.g.centrum autem.e.& tangentes.a.z.&.z.d.coincidant ad.z.& a quibuſdam punctis ducantur ad.a.z.d./h.t.i.c.l.&.m.n.x.o. Dico q́ eſt vt quod fit ex.a.z.ad id quod fit ex.z.d.quod eſt ſub.h.l.i.ad id quod eſt ſub.m.l.x.ducantur ad.a.z.d.per.x.&.i./x.r.&.i.p.& quoniam eſt vt quod fit ex.a.z.ad.a.z.s.trigonum quod fit ex.t.l.ad.t.l.o.& quod fit ex.t.i.ad.t.i.p.& reliquum igitur quod eſt ſub.h.l.i.ad reliquum.i.p.o.l.quadrilaterum eſt vt quod fit ex.a.z.ad.a.z.s.trigonum, equale autem.a.z.s./d.s.ٗ.&.p.o.l.e./c.r.x.l.& vt igitur quod fit ex.a.z.ad.d.ٗ.z.quod eſt ſub.h.l.i.ad.r.x.l.c.vt autem.d.ٗ.z.ad id quod fit ex.d.z./r.x.l.c.ad id quod eſt ſub.m.l.x.& per equum igitur vt quod fit ex.a.z.ad id quod fit ex.z.d.quod eſt ſub.h.l.i.ad id quod eſt ſub.m.l.x.

℞ de ℞ ℞ 4884 p̃ ℞ 48 1/4 ℞ ℞ de ℞ ℞ m̃ ℞ 866 p̃ 48

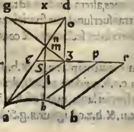


℞ cuba 512 m̃ ℞ de ℞ p̃ 4 ℞ quadra 225 m̃ ℞ 23 1/4

Propoſitio, Vigeſima.

SI contrapoſitas duo lineę tangentes coincidant & per contactionem ducatur quedam linea ad tactus coniungentem coincidens vtriq; ſectionum ducatur autem alia quedam linea ad ipſam ſecans ſectiones & tangentes, erit vt contentum ſub lineis que a contactione ſectionibus coincidunt ad tetragonū quod fit a tāgente, Contentum ſub eo quod eſt intra ſectionem & tangentem lineam ad tetragonum quod fit ex recepta ad tactum.

Sint contrapoſitę.a.b.&.g.d.quarum centrum.e.tangens vero.a.z.&.g.z.& coniungatur.a.g.&.e.z.&.a.e.& producātur & ducat̄ per.z.ad.a.g./b.z.t.& relictum ſit, quod contigit, punctum.h.& per ipſum ad.a.g. ducatur.h.l.s.m.n.x. Dico q; eſt vt quod eſt ſub.b.d.z.ad id quod fit ex.z.a.quod eſt ſub.h.l.x.ad id quod fit ex.a.l.ducantur.n.ab.h.b.ad.a.z./h.p.&.b.r. qm̄ igitur eſt vt quod fit ex.b.z.ad.b.z.r.trigonum quod fit ex.h.s.ad.h.s.p.& quod fit ex.l.s.ad.l.s.z.& reliquum quod eſt ſub.h.l.x.ad.h.l.z.p.quadrilaterum, equale autem quod fit ex.b.z.quod eſt ſub.b.z.d.&.b.r.z.trigonum.a.z.t.&.h.l.z.p.quadrilaterum.a.l.n.trigono eſt igitur vt quod eſt ſub.b.z.d.ad.a.z.t.△^{mi} quod eſt ſub.h.l.x.ad.a.l.m. vt autem.a.z.t.ad id quod fit ex.a.z./.a.n.l.ad id quod fit ex.a.l. per equū igitur vt quod eſt ſub.b.z.d.ad id qđ fit ex.z.a.quod eſt ſub h.l.x.ad id qđ fit ex.a.l.



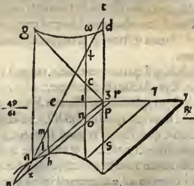
℞ ℞ de ℞ ℞ p̃ 27 m̃ ℞ 83 p̃ 4 ℞ ℞ cubica quadrata 6400

¶Propoſitio, Vigeſimaprima.

EIſdem ſubiectis, Si in ſectione duo puncta relicta ſint & per ipſam ducantur lineæ altera quidem ad tangentem, altera vero ad tactus coniungentem ſecantes inuicemq; & ſectiones, Erit vt contentum ſub his que a contactione ſectionibus coincidunt ad tetragonum quod fit ex tangente contentum ſub lineis que ſunt intra ſectiones & contactiones.

¶Sint.n.eadem que prius relicta autẽ ſint.h.c.puncta & per ipſam ducãtur ad.a.z./n.x. h.o.p.r./c.s.ꝛ.ad.a.g.autem.h.l.m./c.o.f.i.e.+.ω. Dico q; eſt vt quod eſt ſub.b.d.z. ad id quod fit ex.z.a.ſic quod eſt ſub.c.o.ω.ad id quod eſt ſub.n.o.h.qñ.n.eſt vt quod fit ex.a.z.ad.a.z.t.trigonum quod fit ex.a.l.ad.a.l.m.& quod fit ex.x.o.ad.x.o.+.& quod fit ex.x.h.ad.x.h.m.vt igitur totum quod fit ex.x.o.ad totum,x.o.+.ſic ablatum quod fit ex.z.h.ad ablatum.x.h.m.& reliquum igitur quod eſt ſub.n.o.h.ad reliquum h.o.+.m.quadrilaterum eſt vt quod fit ex.a.z.ad.a.z.t.equa'e autẽ.a.z.t./b.y.z.&.h. o.+.m./c.o.r.ꝛ.vt igitur quod fit ex.a.z.ad.b.z.y.quod eſt ſub.n.o.h.ad.c.o.r.ꝛ.vt autem.b.o.z.trigonum ad id quod fit ex.b.z.idem quod eſt ſub.b.z.d.ſic demõſtratum eſt.c.r.o.ꝛ.ad id quod eſt ſub.c.o.ω.per equa igitur eſt vt quod fit ex.a.z.ad id quod eſt ſub.b.z.d.qď eſt ſub.n.o.h.ad id quod eſt ſub.c.o.ω.& ecõuerſo vt quod eſt ſub b.z.d.ad id quod fit ex.z.a.quod eſt ſub.c.o.ω.ad id quod eſt ſub.n.o.h.

℞ ℞ 4391 p̃ ꝯ m̃ ℞ de ꝯ ꝯ p̃ ℞ 49/61



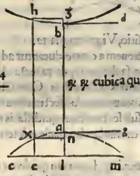
℞ cuba 4096 p̃ 24

¶Propoſitio, Vigeſimaſecunda.

SI contrapoſitas duo lineę equidiſtantes tangant ducantur autem quedam lineæ ſecantes inuicem & ſectiones, altera quidem ad tangentem, altera vero ad tactus coniungentem, Erit ut tranſuerſum latus ſpeciei que eſt ad coniungẽtem tactus ad rectum, Contentum ſub lineis inter ſectionem & contactionem ad contentum ſub ſimiliter acceptis lineis.

¶Sint contrapoſitæ.a.b.tangentes autem ipſas.a.g./&.b.d.equidiſtantes ſint & coniungatur.a.b.producatur autem.e.x.h.quidem ad.a.b.altera uero.e.c.l.m.ſilicet ad.a.g. Dico q; eſt ut.a.b.ad rectum ſpeciei latus, quod eſt ſub.h.e x.ad id quod eſt ſub.c.e. m.ducãtur per.h.x.ad.a.g./x.n.&.h.z.qñ igitur.a.g.&.b.d.tangẽtes ſectiones equi-

diſtantes ſunt, diameter quidem.a.b.ordinate autem ad ipſam applicatę.c.l.&.x.n.& b.z.erit igitur vt.a.b.ad rectum latus & quod eſt ſub.b.l.a.ad id qđ fit ex.l.c.& quod eſt ſub.b.n.a.ad id quod fit ex.n.x.idem quod fit ex.l.c.eſt igitur vt totũ quod eſt ſub b.l.a.ad totum quod fit ex.c.l.ſic ablatum quod eſt ſub.b.n.a.idem quod eſt ſub.z.a.n. eſt.n./n.a.equalis.b.z.ad ablatum quod fit ex.l.e. & reliquum igitur quod eſt ſub.z.l. n.ad reliquum quod eſt ſub.c.e.m.eſt igitur vt.a.b.ad rectam. Equale autem quod eſt ſub.z.l.n.ei quod eſt ſub.h.e.z.vt igitur.a.b.ſpeciei tráſuerſum latus ad rectum quod eſt ſub.h.e.x.ad id quod eſt ſub.c.e.m.



℞ 45916 p̃ ℞ q̃drata 324

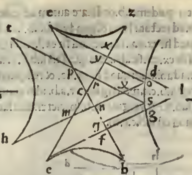
℞ ℞ cubica quadrata 4964 p̃ ℞ de ♀ ♀ m̃

¶ Propoſitio, Vigeſimatertia.

SI in contrapoſitis ad coniunctionẽ duo lineę oppoſitas ſectiones tangẽtes coincidant ad vnam ſectionem, cui contigit, ducatur autem quedam ad tangentem ſecantes inuicem & alteras contrapoſitas; Erit vt tetragonum quod fit ex tãgentibus ad inuicem contentum ſub lineis que ſunt inter ſectiones & contactionẽ ad contentum ſub ſimiliter acceptis lineis.

¶ Sint ad coniunctionem contrapoſitę.a.b./g.d./e.z.&.h.t.centrum autem ipſarum.c. &.a.b./e.z.ſectiones tangentes.a.f.g.l./e.e.d.l.coincidant ad.l.& cõiungãtur.a.c./e.c. & producantur ad.b.&.z.& ab.h.ad.a.l.ducatur.h.m.n.x.o.ex.t.vero ad.e.l./t.p.r.x. s.Dico ꝙ eſt vt quod fit ex.e.l.ad id quod fit ex.l.a.quod eſt ſub.r.x.s.ad id quod eſt ſub.h.x.o.ducatur.n.per.s.ad.a.l./s.ꝛ.ad.e.l.vero ab.o./o.y.qñ igitur cõiunctim contrapoſitarum.a.b./g.d./e.z.&.h.t.diameter eſt.b.e.& ſectionẽ tangit.e.l.& ad ipſam ducta eſt.t.s.eſt.t.p.equalis.p.s.&.per eadem.h.m./m.o.& qñ eſt vt quod fit ex.e.l. ad.e.f.l.trigonum quod fit ex.p.s.ad.p.ꝛ.s.& quod fit ex.p.x.ad.p.n.x.& reliquum quod eſt ſub.t.x.s.ad.ꝛ.n.x.s.quadrilaterum, eſt vt quod fit ex.e.l.ad.f.l.e.trigonum, equale autem.e.f.l.trigonum/a.l.e.&.ꝛ.n.x.s.quadrilaterum.x.r.y.o.eſt igiť vt quod fit ex.e.l.ad.a.l.e.quod eſt ſub.t.x.s.ad.x.o.y.r.quadrilaterum, eſt autem vt.a.e.l.trigonum ad id quod fit ex.a.l./x.r.y.o.ad id quod eſt ſub.h.x.o.per equũ igitur vt quod fit ex.e.l.ad id quod fit ex.a.l.quod eſt ſub.t.x.s.ad id quod eſt ſub.h.x.o.

℞ 9916 p̄ ♀ m̃ ℞ 14931 $\frac{111}{491}$



l ℞ ſoluta 5841 $\frac{1114}{1496}$

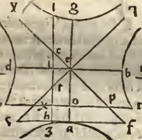
Propoſitio, Vigeſimaquarta.

SI in contrapoſitis ad coniunctionem a centro ducantur ad ſectiones duo lineę & dicatur ipſarum altera tranſuerſa diameter, altera recta, ducanturq; quędam ad diametros coincidentes inuicem & ſectionibus, Contactio vero fit linearum in loco qui eſt inter quatuor ſectiones contentum ſub ſectionibus equidiſtãtis lateri cum eo ad quod rationē habet quod eſt ſub ſectionibus equidiſtãtis recto eam quam quod fit ex recta ad tetragonum quod fit ex tranſuerſa, equale erit tetragono quod bis fit ex dimidio tranſuerſi.

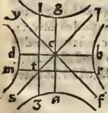
Sint contrapoſitę ad coniunctionem.a.b.g.d.quarum quidem centrum.e, & ab.e.ducantur.a.e.g.tranſuerſa &.d.e.b.recta, & ad.a.g.&.d.b. ducantur.z.h.t./i.c.l./m.n.x./o.p.r.coincidentes inuicem ad.x. Sit autem prius.x.intra angulũ qui eſt ſub.s.e.f. vel ſub.y.e.ⴷ.Dico q; id quod eſt ſub.z.x.l.cum eo ad quod rationem habet quod eſt ſub m.x.r.eam quã quod fit ex, d.b.ad id quod fit ex.a.g.equale eſt eo quod fit ex.a.e.bis, ducatur.n.non tangentes ſectiones.s.e.ⴷ./y.e.f. & per.a. tangens ſectionē.a.h.s.f.qm̃ igitur quod eſt ſub.s.a.f.equalę eſt ei quod fit ex.d.e.eſt igitur vt quod eſt ſub.s.a.f.ad id quod eſt ſub.e.a.ſic quod fit ex.d.e.ad id quod fit ex.e.a.quod autem eſt ſub.s.a.f. ad id quod fit ex.a.e.rationem habet compoſitã ex ratione.s.a.ad.a.e. & ratione.f.a.ad a.e.Sed vt.f.a.ad.a.e./n.x.ad x.t.vt autem.f.a.ad.a.e./p.x.ad.x.c.ratio igit̃ eius quod fit ex.d.e.ad id quod fit ex.a.e.Componitur ex ratione.n.x.ad.x.t.& ratione.p.x.ad.x.c.Componitur autem ex eiſdem ratio eius quod eſt ſub.p.x.n.ad id quod eſt ſub.c.x.t. & ut igitur quod fit ex.d.e.ad id quod fit ex.a.e.quod fit ex.d.e.cum eo quod eſt ſub p.x.n.ad id quod fit ex.a.e.cum eo quod eſt ſub.c.x.t.equale autem quod fit ex.d.e.ei quod eſt ſub.p.m.n.idem ei quod eſt ſub.r.n.m.quod autē fit ex.a.e.equale eſt ei quod eſt ſub.c.z.t.idem quod eſt ſub.l.t.z.ut igitur quod fit ex.d.e.ad id qđ fit ex.e.a.quod eſt ſub.p.x.n.cum eo quod eſt ſub.r.n.m.ad id quod eſt ſub.c.x.t.cum eo quod eſt ſub l.t.z.equale autem quod eſt ſub.p.x.n.cum eo quod eſt ſub.r.n.m.ei quod eſt ſub.r.x.m.ad id quod eſt ſub.c.x.t.cum eo quod eſt ſub.c.z.t.demonſtrandum eſt igitur q; id quod eſt ſub.z.x.l.cum.c.x.t. & eo quod eſt ſub.c.z.t.equale eſt ei quod bis fit ex.e.a. Commune auferatur quod fit ex.a.e.idem quod eſt ſub.c.z.t.Relinquitur igitur de-

monſtrandum ꝙ id quod eſt ſub.c.x.t. cum eo quod eſt ſub.l.x.s. equale eſt ei quod fit ex.a.e.eſt autem. Nam quod eſt ſub.c.x.t.cum eo quod eſt ſub.l.x.z.equale eſt ei quod eſt ſub.l.t.z.idem ei quod eſt ſub.c.z.t.idem quod fit ex.a.e.Coincidāt vtiq̧.z.l.&.m,r. vni non tangentiū ad.t.equale vtiq̧ eſt quod eſt ſub.z.t.l.ei quod fit ex.a.e. & quod eſt ſub.m.t.r.ei quod fit ex.d.e.eſt igiť vt quod fit ex.d.e. ad id quod fit ex.e.a.quod eſt ſub.m.t.r.ad id quod eſt ſub.z.t.l.quare quod eſt bis ſub.z.t.l.equale querimus ei quod fit bis ex.a.e.eſt autem, Sit autē.x.intra āgulū qui eſt ſub.s.e.c.vel ſub.f.e.t. Erit vtiq̧ ſimiliter per cōiunctionē rationū, vt quod fit ex.d.e.ad id quod fit ex.e.a.quod eſt ſub.p.x.n.ad id quod eſt ſub.c.x.t.ei vero quod fit ex.d.e. eq̄le eſt quod eſt ſub.p.m.n.idē quod eſt ſub.r.n.m.ei uero quod fit ex.a.e.equale eſt quod eſt ſub.l.t.z.eſt igitur ut quod eſt ſub.r.n.m.ad id quod eſt ſub.l.t.z.ſic ablatū quod eſt ſub.p.x.n.ad ablatum quod eſt ſub.c.x.r.& reliquū igitur qđ eſt ſub.r.x.m.ad reliquū exceſſum quo ſuperat id quod fit ex.a.e.Illud quod eſt ſub.c.x.t. demōſtrādū igitur ꝙ id quod eſt ſub z.x.l.accipiēs exceſſum quo ſuperat quod fit ex.a.e.illud quod eſt ſub.c.x.t.equale eſt ei quod fit bis ex.a.e.Cōmune auferatur quod fit ex.a.e.idem quod eſt ſub.z.t.l.reliquum igitur demonſtrandum ꝙ id quod eſt ſub.c.x.t.cum exceſſu quo ſuperat quod fit ex.a.e.Illud quod eſt ſub.c.x.t.equale eſt ei quod fit ex.a.e. Eſt autem, Nam minus quod eſt ſub.c.x.t.accipiens exceſſum equale eſt maiori quod fit ex.a.e.

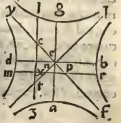
℞ cuba 48116 m̃ ℞ de ꝯ ꝯ p̃ 48



℞ 824 p̃ ꝯ m̃ ℞ 44983



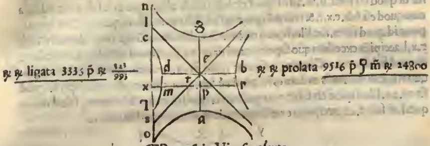
℞ ℞ cubica quadrata 9999 p̃ 24



¶ Propoſitio, Vigeſimaquinta.

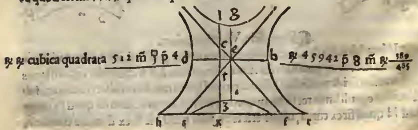
EIſdem ſubiectis ſit contactio equidiſtantium.a.g.&.b.d.intra alteram ſectionum.d.b.vt ſupponitur ad.x. Dico Contentum ſub ſectionibus equidiſtantis tranſuerſo idem quod eſt ſub.o.x.n.eo ad quem rationem habet contentum ſub ſectionibus equidiſantis recto idem quod eſt ſub.r.x.m.eam quam id quod fit ex recta ad id quod fit ex curua, maius erit tetragono quod bis fit ex dimidio tranſuerſi,

Per eadem,n,eſt vt quod fit ex,d,e,ad id quod fit ex,e.a.qđ eſt ſub.p,m.t.ad id quod eſt ſub,s,x,l,equale autem quod fit ex,d,e.ei quod eſt ſub.p,m,t,quod vero fit ex.a.e,ei quod eſt ſub.l.o,s.& vt igitur quod fit ex.d,e,ad id quod fit ex,a,e,quod eſt ſub,p.m, t.ad id quod eſt ſub,l.o,s,& quoniã eſt vt totum quod eſt ſub,p.x,t,ad totum quod eſt ſub,l,x,s,ſic ablatum quod eſt ſub.p,m.t.ad ablatum quod eſt ſub,l.o.s,idem quod eſt ſub.n,s,o.& reliquum igitur quod eſt ſub.r,x,m.ad reliquum quod eſt ſub,ꝛ,x.c,eſt vt quod fit ex,d,e,ad id quod fit ex,a,e.demonſtrandum igitur ꝗ id quod eſt ſub.o,x.n, eo quod eſt ſub.ꝛ,x.c,maius eſt eo quod bis fit ex.a.e.Cõmune auferatur quod eſt ſub ꝛ.x.c,reliquum igitur demonſtrandum ꝗ id quod eſt ſub,o.ꝛ.n,equale eſt ei quod fit bis ex,a.c,Eſt autem,



Propoſitio, Vigeſimaſexta.

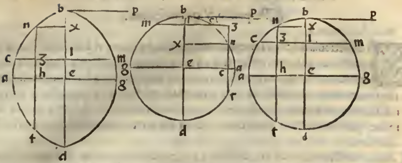
SI vero Contactio ad,x.equidiſtantium ſit intra alteram ſectionum.a.g,vt ſupponitur contentum ſub ſectionibus equidiſtantis tranſuerſo,idem quod eſt ſub.l. x.z.eo ad quod rationem habet quod eſt ſub reliqua ſectiõum idem quod eſt ſub r.x.h.ea quam quod fit ex recta ad id qđ fit ex curua,minus erit tetragono quod bis fit a dimidia tranſuerſi,qñ.n.per eadem que prius eſt vt quod fit ex,d,e.ad id quod fit ex e.a,quod eſt ſub,f.x,s,ad id quod eſt ſub.c,x.t.& totũ igitur quod eſt ſub.r,x.h.rationem habet eius quod fit ex recto ad id quod fit ex tranſuerſo ad quod eſt ſub.c.x.t.cum eo quod fit ex.a.e,demonſtrãdum igitur ꝗ id quod eſt ſub.l.x.z.eo quod eſt ſub.c,x.t, cum eo quod fit ex.a.e.minus eſt eo quod bis fit ex,a e.Commune auferatur quod fit ex,a.e,reliquum igitur demonſtrandum ꝗ id quod eſt ſub.l.x.z.eo quod eſt ſub.c.x.t, minus eſt eo quod fit ex.a,c.idem quod eſt ſub.l.t.z.Eſt autẽ quod.n,eſt ſub.l.t.z.cum eo quod eſt ſub,l,x.z,equale eſt quod eſt ſub,c.x.t.



ℭ Propoſitio, Vigeſimaſeptima.

SI defectionis uel circuli circunferentię coniunctę diametri ducãtur & dicatur earum altera recta altera trãſuerſa, & ad ipſas ducantur duo lineę coincidentes inuicem & lineę tetragona que fiũt ex acceptis lineis in lineã ad trãſuerſam ductam inter contactionem linearum & lineę accipientia que fiunt ex acceptis lineis in lineã ad rectam ductam inter cõtactionẽ & lineam ſimiles & ſimiliter deſcriptę ſpecies ſub iectæ speciei ad tectam diametrum, equalia erunt tetragono quod fit ex tranſuerſa diametro.

ℭ Sit .n. defectio uel circuli circunferentia .a.b.g.d. cuius centrum .e. & ducatur ipſius duo coniunctę diametri, recta quidem .a.e.g. tranſuerſa autẽ .b.e.d. & ad .a.g. & .b.d. ducantur .n.z.h.t. & .c.l.z.m. Dico ꝙ tetragona que fiunt ex .n.z. & .z.t. accipientia que fiunt ex .c.z. & .z.m. ſpecies ſimiles & ſimiliter deſcriptæ ſpeciei que eſt ad .a.g. Equalia ſunt tetragono quod fit ex .b.d. ducatur ab .n. ad .a.e. /n.x. ordinate igitur applicata eſt ad .b.d. Igitur & vt .b.p. ad .b.d. quod fit ex .a.g. ad id quod fit ex .b.d. quod autem fit ex .b.d. equale eſt ſpeciei quæ eſt ad .a.g. eſt igitur vt .b.p. ad .b.d. tetragonum quod fit ex .a.g. ad ſpeciem quæ fit ex .a.g. vt autem □nũ quod fit ex .a.g. ad ſpeciem quæ fit ex .a.g. □nũ quod fit ex .n.x. ad ſpeciem quæ fit ex .n.x. ſimilem ſpeciei quæ eſt ad .a.g. Igitur & vt .p.b. ad .b.d. □nũ quod fit ex .n.x. ad ſpeciem quæ fie ex .n.x. ſimilem ſpeciei quæ eſt ad .a.g. eſt autem & vt .b.p. ad .b.d. quod fit ex .n.x. ad id quod eſt ſub .b.x.d. equalis igitur eſt ſpecies quæ fit ex .n.x. idem quod fit ex .z.l. ſimile ſpeciei quæ eſt ad .a.g. ei quod eſt ſub .b.x.d. ſimiliter vtiq; demonſtrabimus ꝙ ſpecies quæ fit ex .c.l. ſimilis ſpeciei quæ eſt ad .a.g. equalis eſt ei quod eſt ſub .b.l.d. & quoniam recta .y.t. ſecata eſt per equalia quidem ad .h. in inequalia vero ad .z. □na quæ fiunt ex .t.z. & .z.n. dupla ſunt eorum quæ fiunt ex .t.h. & .h.z. idem eorum quæ fiunt ex .n.h. & .h.z. per eadem vtiq; □na quæ fiunt ex .m.z. & .z.c. dupla ſunt □rũ quæ fiunt ex .c.l.z. & ſpecies quæ fiunt ex .m.z.c. ſimilia ſpeciei quæ ſunt ad .a.g. dupla ſunt ſimilium ſpecierum quæ fiunt ex .c.l.z. equales vero ſunt ſpecies quæ fiunt ex .c.l.z. his quæ ſunt ſub .b.x.d. & .b.l.d. □na autem quæ fiunt ex .n.h.z. his quæ fiunt ex .x.e.l. Igitur □na quæ fiunt ex .n.z.t. cum ſpeciebus quæ fiunt ex .c.z.m. ſimilibus ſpeciei quæ eſt ad .a.g. dupla erunt eorum quæ ſunt ſub .b.x.d. & .b.l.d. & eorum quæ fiunt ex .x.e.l. & quoniam recta .b.d. ſecata eſt per equalia quidem ad .e. in inequalia vero ad .x. quod eſt ſub .b.x.d. cum eo quod fit ex .x.e. equale eſt ei quod fit ex .b.e. ſimiliter autem & quod eſt ſub .b.l.d. cum eo quod fit ex .l.e. equale eſt ei quod fit ex .b.e. quare quæ ſunt ſub .b.x.d. & quæ ſunt ſub .b.l.d. & quæ fiunt ex .x.e. & .l.t. equalia ſunt ei quod bis fit ex .b.e. Igitur □na quæ fiunt ex .n.z.t. cum ſpeciebus quæ fiunt ex .c.z.m. ſimilibus ſpeciei quæ eſt ad .a.g. dupla ſunt eius quod bis fit ex .b.e. eſt autem & quod fit ex .b.d. duplum eius quod fit ex .b.e. Igitur □na quæ fiunt ex .n.z.t. accipientia ſpecies quæ fiunt ex .c.z.m. ſimiles ſpeciei quæ eſt ad .a.g. equalia ſunt ſpeciei quæ fit ex .b.d.

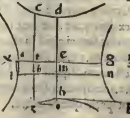


ℭPropoſitio, Vigeſimaoctaua.

SI in contrapoſitis ad cōiunctionē cōiunctę diametri ducātur & dicatur eorum altera quidē recta, altera vero tranſuerſa ducātur aūt ad ipſas duo lineę coincidentes inuicem & ſectionibus □ na que fiunr ex receptis lineis in lineam ad rectam ductam inter cōtactionē linearum & ſectionum ad □ na que fiunt ex receptis lineis in lineam ad trāſuerſam ductā inter contactionē linearum & ſectiōum rationem habent eam quā □ nū quod fit ex recta ad □ nū quod fit ex trāſuerſa.

ℭSint ad cōiunctionē cōtrapoſitę.a.b.g.d.diametri aūt ipſarū recta quidē.a.e.g.trāuerſa vero.b.e.d. & ad ipſas ducātur .z.h.t.c./h.l.m.n. ſecātes inuicem & ſectiões. Dico ꝙ □ na que fiunt ex.l.h.n.ad eā que fiunt ex.z.h.c.ratiomē habēt eius quod fit ex.a.g. ad id quod fit ex.b.d.ducātur.n.ab.z. &.l.ordinate.l.x.&.z.o.equidiſtātes.n.ſunt.a.g.&.b.d.& ex.b.ducat̄.b.p.recta.b.d.manifeſtū vtiqꝫ ꝙ eſt vt.p.b.ad.b.d.que fiūt ex a.g.ad id quod fit ex.b.d.& quod fit ex.a.e.ad id quod fit ex.e.b.& quod fit ex.z.o.ad id quod eſt ſub.b.o.d.& quod eſt ſub.g.x.a.ad id quod fit ex.l.x.eſt igitur vt vnū pręeuntiū ad vnū ſequentiū ſic omnia pręeuntia ad omnia ſequentia vt igitur quod fit ex a.g.ad id quod fit ex.b.d.quod eſt ſub.g.x.a.cum eo quod fit ex.a.e.& eo quod fit ex o.z.idem eo quod fit ex.e.t.ad id quod eſt ſub.d.o.b.cū eo quod fit ex.b.e.& eo quod fit ex.l.x.idē quod fit ex.m.e.ſed qđ eſt ſub.g.x.a.cū eo quod fit ex.a.e.eq̄le eſt ei quod fit ex.x.e.qđ vero eſt ſub.d.o.b.cū eo qđ fit ex.b.e.eq̄le eſt qđ fit ex.o.e.vt igit̄ quod fit ex.a.g.ad id quod fit ex.b.d.que fiūt ex.x.h.t.ad ea que fiunt ex.o.e.m.idē que fiūt ex.l.m.h.ad ea que fiunt ex.z.t.h.& ſunt que fiunt ex.n.h.l.dupla eorū que fiunt ex.l.m.h.vt demonſtratū & eorum que fiunt ex.z.h.t.que fiunt ex.z.h.c.Igitur & vt quod fit ex.a.g.ad id quod fit ex.b.d.quod fit ex.l.h.n.ad ea que fiunt ex.z.h.c.

℞ de ♀ p̄ 24 m̄ ℞ ligata 17916

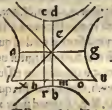


℞ cronica de ♀ p̄ 83 - 196/345 -

¶ Propoſitio, Vigeſimanona.

Iſdem ſubiectis ſi equidiſtãs rectę ſecet nõ tangentes que fiũt ex receptis lineis in lineam ad rectam ductã inter contactionẽ linearum & non tangẽtes accipientia dimidium tetragoni quod fit ex recta ad ☐ ma que fiũt ex receptis in lineam ad tranſuerſam ductam inter cõtactionem linearum & ſectiões rationem habent eam quam ☐ nd quod fit ex recta ad ☐ nu quod fit ex tranſuerſa.

¶ Sit.n.eadẽ que prius &.m.l.ſecet nõ tangẽtes ad.x.&.o. Demonſtrandũ q̃ que fiunt ex x.h.o.accipientia dimidiũ eius quod fit ex.a.g.idem quod bis fit ex.e.a.idẽ quod bis fit ex.l.x.n.ad ea que fiunt ex.z.h.c.rationem habẽt eã quã quod fit ex.a.g.ad id quod fit ex.b.d. q̃ñ igiť .l.x.a.eq̃lis eſt.o.n. que fiunt ex.l.h.n.ſuperãt que fiunt ex.x.h.o.eo quod bis eſt ſub.n.x.l.que vero fiunt ex.l.h.n.ad ea que fiunt ex.h.o.rationẽ habẽt eã quã quod fit ex.a.g.ad id qď fit ex.b.d. Igiť & que fiunt ex.x.h.o.cũ eo qď bis fit ex e.a.ad ea que fiunt ex.z.h.c.rationẽ habẽt eã quã qď fit ex.a.g.ad id quod fit ex.b.d.



℞ prolata 4964 p̃ ℞ 225 ... ℞ ℞ cronica 2243 m̃ ℞ 4913 $\frac{181}{486}$

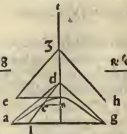
¶ Propoſitio, Trigeſima.

SI hyperbolẽ duo lineę tangẽtes coincidãt & per tactũ quidẽ linea producať per cõtactionẽ vero ducať linea ad quandã nõ tangẽtiũ ſecãs ſectionẽ & tactus con iungentẽ,que eſt inter cõtactionẽ & tactus cõiungentẽ in duo ſecabiť a ſectiõe.

¶ Sit hyperbole.a.b.g.& tangentes.a.d.g.non tangentes vero.e.z.h.& cõiungatur.a.g. & per.d. ducatur.d.c.l.ad.z.h. Dico q̃.d.c.equalis eſt.c.l.cõiungatur.n.z.d.& producatur in vtranq̃ & ponatur.z.t.equalis.b.z.& per puncta.b.&.c.ad.a.g.ducatur.b.e.&.c.n.ordinate igitur applicatę ſunt,& quoniam ſimile eſt.b.c.z.trigonum.d.n.c.eſt igitur vt quod fit ex.d.n.ad id quod fit ex.n.c.quod fit ex.b.z.ad id quod fit ex.b.c. vt autem quod fit ex.b.z.ad id quod fit ex.b.c.ſic.t.b.ad rectam, Igitur & vt quod fit ex.d.n.ad id quod fit ex.n.c./t.b.ad rectam,Sed vt.t.b.ad rectam ſic quod eſt ſub.t.n. b.ad id quod fit ex.n.c.Igitur & vt quod fit ex.d.n.ad id quod fit ex.n.c.quod eſt ſub t.n.b.ad id quod fit ex.n.c.equale igitur eſt quod eſt ſub.t.n.b.ei quod fit ex.d.n.eſt autem & quod eſt ſub.m.z.d. equale ei quod fit ex.z.b.propterea q̃.a.d.tangit, &.a.m. applicata eſt quare & quod eſt ſub.t.n.b.cum eo quod fit ex.z.b.equale eſt ei quod eſt ſub.m.z.d.cum eo quod fit ex.d.n.quod vero eſt ſub.t.n.b.cũ eo quod fit ex.z.b.equale eſt ei quod fit ex.z.n.Igitur & quod eſt ſub.m.z.d.cum eo quod fit ex.d.n.equale eſt ei quod fit ex.z.n.Igitur.m.d.in duo ſecatur ad.n.adiacentem habens.d.z.& equidiſtantes ſunt.c.n.&.l.m.igitur.d.c.equalis eſt.c.l.

℞ cuba 4?9 p̄ ℞ ſolida 513 p̄ 18

℞ ſolida 3389 p̄ ℞ ℥ ℥ p̄ ℞ $\frac{45}{94}$



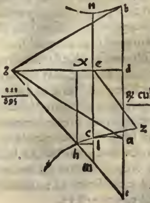
ℭPropoſitio, Trigeſimaprima.

SI cõtrapoſitas duo lineę tangẽtes coincidãt & per tactus linea producať per cõtactionẽ vero ducať linea ad nõ tangentẽ ſecãs ſectionẽ & tactus cõiungentem, que eſt inter cõtactionẽ & tactus cõiungentem in duo ſecabitur a ſectione.

ℭSint cõtrapoſitę.a.b. tangẽtes vero.a.g.b. & cõiuncta.a.b. producať nõ tangẽs vero ſit.z.c.& per.g.ad.z.e.ducať.g.h.t. Dico q.g.h.equalis eſt.h.t.& cõiungať.g.e.& producatur ad.d.& per.e.&.h.ad.a.b.ducãtur.e.c.m.n.&.h.x.per.h.vero &.c.ad.g.d./c.z.&.h.l.qm̃ ſimile eſt.c.z.e./m.l.h.eſt vt quod fit ex.e.c.ad id quod fit ex.c.z.quod fit ex.m.l.ad id quod fit ex.l.h.vt aũt quod fit ex.e.c.ad id quod fit ex.c.z.demõſtratum eſt quod eſt ſub.n.l.c.ad id quod fit ex.l.h.equale igitur quod eſt ſub.n.l.c.ei quod fit ex.m.l.Cõmune apponať quod fit ex.c.e.quod igitur eſt ſub.n.l.e.cum eo quod fit ex c.e.idẽ quod fit ex.l.e.idẽ quod fit ex.h.x.equale eſt his que fiunt ex.m l.&.c.e.vt aũt quod fit ex.h.x.ad id quod fit ex.m.l.&.e.r.ſic quod fit ex.x.g.ad id quod fit ex.l.h.& c.z.equale igitur eſt quod fit ex.x.g.his que fiunt ex.h.l.&.c.z.equale autem eſt quod fit ex.l.h.ei quod fit ex.x.e.& quod fit ex.c.z.ei quod fit ex dimidia ſecundę diametri idem ei quod eſt ſub.g.e.d.quod igitur fit ex.g.x.equale eſt & ei quod fit ex.x.c.& ei quod eſt ſub.g.e.d.Igitur.g.d. in equalia ſecatur ad.x.in inequalia vero ad.e.& eſt d.t.equidiſtans.h.x.Igitur.g.h.equalis.h.t.

℞ ℞ ſolida 14?83 p̄ ℥ m̃ ℞ $\frac{???}{895}$

℞ cuba & ſolida 4989 p̄ $\frac{91}{95}$

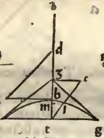


℄Propoſitio, Trigeſimaſecunda.

SI hyperbolem duo lineæ tangentes coincidant & per tactus linea producatur per contactionẽ vero tãgentiũ ducatur linea ad tactus cõiungentẽ & per ſectionem per medium coniungẽtis tactus ducatur linea ad quandã non tangentium recepta inter ſectionem per medium & equidiſtantem in duo ſecabitur a ſectione.

℄Sit hyperbole.a.b.g.cuius centrum.d.non tangens autem.d.e.& tangant.a.z.&.z.g.& coniungatur.g.a.&.z.d.& producatur ad.h.&.t.manifeſtum vtiq; q.a.t.equalis eſt t.g.ducatur vtiq; per.z./z.c.ad.a.g.per.t.vero/t.l.c.ad.d.e.Dico q.c.l.equalis eſt.t.l.ducantur per.b.&.l.ad.a.g./l.m.&.b.e.eſt vtiq; vt prius demonſtratum eſt vt quod fit ex.d.b.ad id quod fit ex.b.e.& quod fit ex.t.m.ad id quod fit ex.m.l.& quod eſt ſub m.b.h.ad id quod fit ex.m.l.equale igitur quod eſt ſub.h.m.b.ei quod fit ex.m.t.eſt autem & quod eſt ſub.t.d.z.equale ei quod fit ex.d.b.propterea quod.a z tangit & applicata eſt.a.t.quod igitur eſt ſub.h.m.b.ei quod fit ex,m,t.eſt autem & quod eſt ſub t.d.z.equale ei quod fit ex.d.b./cum eo quod fit ex.d.b.quod eſt id quod fit ex.d.m.equale eſt ei quod eſt ſub.t.d.z.cum eo quod fit ex.m.t.in duo igitur ſecatur.z.t.ad.m.adiacẽtem habẽs.d.z.& ſunt equidiſtãtes.c.z.&.l.m.Igitur.c.l.equalis eſt.l.t.

℞ ſolida 454 p̄ ℞ ligata 839 p̄ 4



℞ ℞ de ℞ p̄ ℞ ſciolta 433

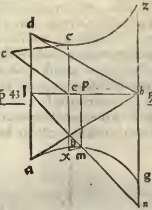
℄Propoſitio, Trigeſimatertia.

SI contrapoſitas lineę tangentes coincidant & per tactus quidem linea producatur per contactionem vero tangentium ducatur linea ad coniungentem tactus per ſectionem vero per medium coniungentis tactus ducatur linea ad quandam non tangentium coincidens ſectioni & ductæ per contactionem equidiſtanti,quę eſt inter ſectionem per medium & equidiſtantem a ſectione in duo diuidetur.

℄Sint contrapoſitę.a.b.g.&.d.e.z.& tangentes.a.h.&.d.h.cẽtrum autem.t.non tãgens vero.c.t.& cõiungatᷣ.t.h.& producatᷣ,cõiungatur aũt &.a.l.d.manifeſtũ q.in duo ſecatur ad.l.ducatur per.c.&.t.ad.a.d./b.t.e.&.g.h.z.ad.t.c.vero per.l./l.m.Dico q.l.m.eſt equalis.m.n.applicentur.n.ab.e.&.m.ad.h.t./e.c.&.m.x.per.m.vero ad.a.d./m.p.qñ igitur per demonſtrata eſt vt quod fit ex.t.e.ad id quod fit ex.e.c.quod eſt ſub.b.x.e.ad id quod fit ex x.m.vt igitur quod fit ex.t.e.ad id quod fit ex.e.c.quod eſt ſub b.x.e.cũ eo quod fit ex.t.e quod eſt quod fit ex.t.x.ad id quod fit ex.c.e.&.x.m.quod vero fit ex.c.e.equale demonſtratum eſt ei quod eſt ſub.h.t.l.& quod fit ex.x.m.ei

quod fit ex.t.p.eſt igitur vt quod fit ex.t.e.ad id quod fit ex.e.c.quod fit ex.t.x.idem quod fit ex.m.p.ad id quod eſt ſub.t.l.&.t.h.cum eo quod fit ex.t.p.vt autem quod fit ex.t.e.ad id quod fit ex.c.c.quod fit ex.m.p.ad id quod fit ex.p.l.vt igitur quod eſt ſub m.p.ad id quod fit ex.p.l.quod fit ex.m.p.ad id quod eſt ſub.h.t.l.cum eo quod fit ex t.p.equale igitur quod fit ex.l.p.ei quod eſt ſub.h.t.l.cum eo quod fit ex.t.p.linea igitur.l.h.ſecatur in equalia quidem ad.p.in inequalia vero ad.t.& ſunt equidiſtantes.m.p.&.h.n.Igitur.l.m.ad.m.n.

℞ ℞ ſolida 9516 p̃ ℞ de 9 9 p̃ 43



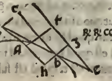
℞ ℞ cronica & ſolida 303

℄ Propoſitio, Trigeſimaquarta.

SI hyperboles in vna non tangentium relictum ſit punctum & ab ipſo linea tágat ſectionem & per tactus ducatur equidiſtans non tangenti, ducta per relictũ punctum equidiſtans alteri non tangentium a ſectione inequalia diuidetur.

℄ Sit hyperbole.a.b.non tangentes autem.g.d.e.& relictum ſit in.g.d.contingens punctum.g.& per ipſum ducatur tangens ſectionem.g.b.e.& per.b.ad.g.d.ducatur.z.b.h.per.g.vero.g.a.h./d.e.Dico q.g.a.equalis eſt.a.h.ducatur.n.per.a./a.t.equidiſtans g.d.per.b.autem.b.c./.d.e.qñ igitur.g.b.equalis eſt.b.e.Igitur &.g.c.equalis.c.d.& d.z./z c.& quoniã quod eſt ſub.c.b.z.equale eſt ei quod eſt ſub.g.a.t.equalis autem.b.z./d.c.idem.g.c.&.a.t./d.g.quod igitur eſt ſub.d.g.t.equale eſt ei quod eſt ſub.c.g.h.eſt igitur vt.d.g.ad.g.c./g.h.ad.a.g.eſt autem.d.g.dupla.g.c.dupla igitur &.g.h./a.g.Igitur.g.a.equalis.a.n.

℞ ſolida 1615 m̃ 49 p̃ 9 m̃ 8



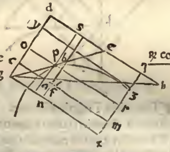
℞ ℞ congrua 424 p̃ ℞ ligata 512 p̃ 48

¶Propoſitio, Trigeſimaquinta.

Eſdem exiſtentibus, Si a relicto puncto linea quedam ducatur ſecās ſectionem ad duo pūcta erit vt tota ad eā que extra recipit, ſectiōes itus recepte linee.

¶Sit.n.a.b.hyperbole &.g.d.c.non tangentes &.g.b.e.tangens &.t.b.equidiſtans & per.g.ducatur quedam linea.g.a.l.z.h.ſecās ſectionem ad.a.z. Dico q̄ eſt vt.z.g.ad.g.a./z.l.ad.a.l. ducantur per.g.a.&.b.z.ad.d.e./g.n.x./c.a.f.m./o.p.b r./z.y.per.a.z.vero ad.g.d./a.p.s./z.t.r.m.x qm̄ igitur.a.g.eq̄lis eſt.z.h.Igitur &.c.a.equalis.ꝛ.h.&.c.a./d.s.Igitur &.ꝛ.h.equalis eſt.d.s.quare &.g.c./d.y.& quoniā.c.g.equalis eſt.d.y.&.d.c.equalis.g.y.vt igitur.d.c.ad.c.g./y.g.ad.g.c.vt aūt.y.g.ad.g.c./z.g.ad.g.a.vt autem.z.g.ad.g.a./m.c.ad.c.a.vt autem.m.c.ad.c.a./m.d.ad.d.a.vt vero d.c.ad.c.g./t.c.ad.c.n.& vt igitur.m.d.ad.d.a./t.c.ad.c.n.equale aūt.a.d./d.b.idem o.n.eſt.n./g.b.equalis.b.e.&.d.o./o.g.vt igitur.d.m.ad.o.n.& reliquum.m.t.ad reiquum.b.c.eſt vt totum.l.m.ad totum.o.n.Et quoniam.c.s.equale eſt.t.o.Cōmune auferatur.d.p.reliquum igitur.c.p.equale eſt.p.t.Cōmune apponatur.a.b.totum igitur c.b.equale eſt.a.t.eſt igitur vt.m.d.ad.d.a.ſic.m.t.ad.t.a. Sed vt.m.d.ad.d.a./m.c.ad c.a.idem.z.g.ad.g.a.vt autem.m.t.ad.t.a./m.f.ad.f.a.idem.z.l.ad.l.a. Igitur & vt.z.g.ad.g.a./z.l.ad.l.a.

℞ ſolida 429 p̄ ℞ cōgruēte 2689 p̄ ℞ $\frac{1781}{4913}$



℞ congrua & cōgruēte 2024

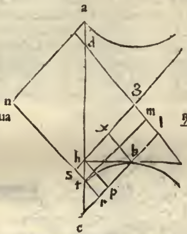
¶Propoſitio, Trigeſimaſexta.

EIſdem exiſtentibus, Si a puncto ducta linea neq; ſectionem ſecet ad duo puncta neq; equidiſtans ſit non tangenti, coincidet quidem contrapoſitæ ſectioni, erit autem vt tota ad eam que eſt inter ſectionem & equidiſtantem per tactum, que eſt inter contrapoſitam & non tangentem ad eam quæ eſt inter non tangentem & alteram ſectionem.

¶Sint contrapoſitæ.a.&.b.quarum centrum.g.non tangentes autem.d.c.&.z.h.& in.g.h.relictum ſit punctum.h.& ab ipſo ducatur.h.b.e.tangens &.h.t.neq; equidiſtans exiſtens.g.c.neq; ſectionem ſecans ad duo puncta demonſtratum eſt q̄.t.h.producta coincidit.g.d.& per hoc & ſectioni.a.Coincidat ad.a.& ducatur per.b./b.c.l.equidiſtans.g.h. Dico q̄ eſt vt.a.c.ad.c.t.ſic.a.t.ad.h.t.ducantur.n.ab.a.&.t.punctis ad.g.

h./t.m. &.a.n.ex.b.h.t. vero ad .d.e./b.x.h.p./t.r.s.n. qn̄ igitur.a.d.eſt equalis .h.t.eſt vt.a.h.ad.h.t./n.s.ad.s.t.vt autem.d.t.ad.t.h./g.s.ad.s.h.Igitur & vt.n.s.ad.s.t./g.s.ad s.h.Sed vt.n.s.ad.s.t./n.g.ad.g.t.vt autem.g.s.ad.s.h./r.g.ad.r.h.Igitur & vt.n.g.ad g.t./g.r.ad.r.h. & vt vnum ad vnum, ſic omnia ad omnia vt igitur.n.g.ad.g.t./totum n.l.ad.g.t.&.r.h. & quoniam.e.b.equalis eſt .b.h.&.l.b.equalis. eſt.b.p.&.l.x./b.h.& l.x.equale.g.t.Igitur &.b.h.equalis.g.t.eſt igitur vt.n.g.ad.g.t.ſic totum.l.n.ad.b.h. &.r.h.idem.r.x.eſt autem.r.x.equalis.l.t.quoniam &.g.t./b.g.&.m.b./x.t.eſt igitur vt n.g.ad.g.t.ſic.n.l.ad.l.t.Sed vt.n.g.ad.g.t./n.s.ad.s.t.idem.a.h.ad.h.t.vt autem.n.l. ad.l.t./n.r.ad.r.t.idem.a.c.ad.c.t.Igitur & vt.a.c.ad.c.t./a.h.ad.h.t.

℞ ſolida 729 p̃ ℞ congrua 1028 p̃ ℞ 4649



℞ 12500 m̃ ℞ ſolida 9643

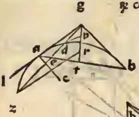
❡Propoſitio, Trigeſimaſeptima.

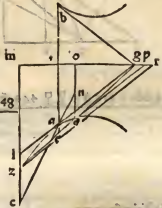
SI Coni ſectionem vel circuli circunferentiam vt contrapoſitarum duo lineæ tangentes coincidant, & in tactus ipſarum coniuncta linea, a contactione tangentium ducatur quedam ſecans lineá ad duo puncta, Erit vt tota ad extra receptam tactæ ſectiones a coniungente tactus.

❡Sit coni ſectio.a.b. & tangentes.a.g.&.g.b. & coniungatur.a.b. & ducatur.g.d.e.z. Dico ꝙ eſt vt.g.z.ad.g.d./z.e.ad.e.d. ducantur per.g.&.a. diametri ſectionis.g.t./a. c.per.z.vero &.d.ad.a.t.&.l.g./d.p./z.r.l.z.m./n.d.o.qn̄ igitur.l.z.m.equidiſtans eſt x.d.o.eſt vt.z.g.ad.g.d./l.z.ad.x.d.&.z.m.ad.d.o.&.l.m.ad.x.o.Igitur vt quod fit ex.l.m.ad id quod fit ex.x.o.quod fit ex.z.m.ad id quod fit ex.d.o.Sed vt quod fit ex l.m.ad id quod fit ex.x.o.trigonum.l.m.g.ad.x.o.g.vt autem quod fit ex.z.m.ad id quod fit ex.o.d.trigonum.z.r.m.ad.d.p.o.igitur & vt.l.g.m.ad.x.o.g./z.r.m.ad.d. o.p.& reliquum.l.g.r.z.quadrilaterum ad reliquum.x.g.p.d.equale autem eſt.l.g.r. z.quadrilaterum trigono.a.l.c./d.e.x.g.p.d./a.n.x.vt igitur quod fit ex.l.m.ad quod fit ex.x.o.trigonum.a.l.c.ad.a.n.x.Sed vt quod fit ex.l.m.ad id quod fit ex.x.o.quod fit ex.z.g.ad id quod fit ex.g.d.vt autem.a.l.c.ad.a.n.x.quod fit ex.l.a.ad id quod

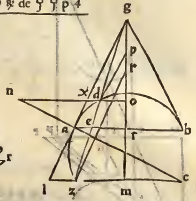
fit ex.z.x. & quod fit ex.z.r.ad id quod fit ex.e.d. Igitur & vt quod fit ex.z.g.ad id quod fit ex.g.d. quod fit ex.z.e.ad id quod fit ex.e.d. & propter hoc vt.z.g.ad.g.d./z.e.ad.d.e.

℞ congruente 24 p̄ ℞ de 9 9 p̄ 4





℞ ſolida 1624 p̄ 48

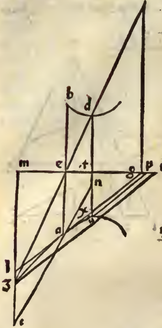


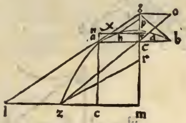
ℂPropoſitio, Trigeſimaoctaua.

EIſdem exiſtentibus, Si per contactionem tangentium ducatur quedam linea ad coniungentem tactus & per medium coniungentis tactus ducta linea ſecat ſectionem ad duo puncta & per contactionem equidiſtantem coniungentis tactus, Erit vt tota ducta ad extra receptam inter ſectionem & equidiſtantem factæ ſectiones a coniuncta in tactus.

ℂSit a.b.ſectio &.a.g.&.b.g. tangentes &.a.b.tactus coniungens & .a.n.&.g.m. diametri, manifeſtum ꝙ.a.b.in duo ſecatur ad.e.ducatur ex.g./g.o.equidiſtans.a.b.& ducatur per.e./z e.o.d. Dico ꝙ eſt vt.z.o.ad .o.d./z.e.ad.e.d. ducantur.ex.z.d.ad.a.b./l.z.c.m./d.t.h.z.n.per.z.vero &.h.ad.l.g./z.r./h.p.ſimiliter his que prius demonſtrabitur ꝙ eſt vt quod fit ex.l.m.ad id quod fit ex.x.t.quod fit ex.l.a.ad id quod fit ex.a.x. & eſt vt quod fit ex.l.m.ad id quod fit ex.x.t.quod fit ex.l.g.ad id quod fit ex.g.x.& quod fit ex.z.o.quod fit ex.o.d.vt autem quod fit ex.l.a.ad id quod fit ex.a.x.quod fit ex.z.e.ad id quod fit ex.e.d.vt igitur quod fit ex.z.o.ad id quod fit ex.o.d.quod fit ex z.e.ad id quod fit ex.e.d.& vt.z.o.ad.o.d./z.e.ad.e.d.

℞ ℞ ſolida 1233 m̃ ℞ congruente 49 1/2 p̃ 5/6





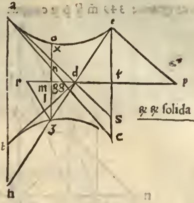
℞ ℞ ſolida 2816 p̃ ℞ ϙ ϙ 464 m̃ ℞ 41/54 p̃ 18

¶Propoſitio, Trigeſimanona.

SI contrapoſitas duo lineæ tangentes coincidant & per tactus linea producatur, a contactione tangentium ducta linea ſecat vtranque ſectionem, & coniungentem tactus, Erit vt tota ducta ad extra receptam inter ſectionem & coniungenem tactus, ſic factæ ſectiones lineæ ſub ſectionibus & contactione tangentium.

¶Sint cõtrapoſitæ .a.b. quarũ centrũ .g. tangẽtes autẽ .a.d. & .d.b. & cõiunctę .a.b. & g.d. producat̃ & per .d. ducatur quedã linea .e.d.z.h. Dico q eſt vt .e.h. ad .z.h. ſic .e.d. ad d.z. cõiugatur .n. ſ .a.g. & producat̃ & per .e.z. ad .a.b. ducãtur .e.t.s.c. ſ .z.l.m.n.x.o. ad .a. d. aũt .e.p.z.r. qñ igitur equidiſtãtes ſunt .z.x.e.s. & ductę in ipſas .e.z. ſ .x.s. ſ .t.m. eſt vt e.t. ad .t.s. ſ .z.m. ad .m.x. & inuicẽ vt .e.t. ad .z.m. ſ .t.s. ad .x.m. Igitur & vt quod fit ex .t. e. ad id quod fit ex .m.z. quod fit ex .t.s. ad id quod fit ex .x.m. Sed vt quod ex .e.t. ad id quod fit ex .m.z. trigonũ .e.t. ad .z.r.m. vt autem quod fit ex .t.s. ad id quod fit ex .x. m. trigonum .d.t.s. ad .x.m.d. Igitur & vt .e.t.p. ad .z.r.m. ſ .d.t.s. ad .x.m.d. equale autem e.t.p. ſ .a.s.c. ſ .t.d.s. & .r.m.z. ſ .a.x.n. ſ .d.m.x. vt igitur .d.t.s. ad .x.m.d. ſ .a.s.c. cum .t.d.s. ad .a.x.n. cum .x.m.d. Sed vt .a.s.c. ad .a.n.x. quod fit ex .c.a. ad id quod fit ex .a.n. idem quod fit ex .e.h. ad id qđ fit ex .z.h. vt aũt .d.t.s. ad .x.d.m. qđ fit ex .t.d. ad id qđ fit ex d.m. idẽ quod fit ex .e.d. ad id quod fit ex .d.z. Igit̃ & vt .e.z. ad .h.z. ſ .e.d. ad .d.z.

℞ ℞ cõgruẽte 1466 p̄ ℞ 11/11



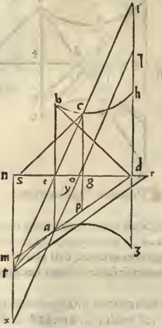
℞ ℞ ſolida 999 p̄ ℞ 161/141

ℭPropoſitio, Quadrageſima.

EIſdem exiſtentibus, Si per contactionem tangentium ducatur linea ad tactus coniungentem & a media coniungentem tactus ducta linea ſecat vtranq; ſectionum & coniungentem ad tactus, Erit vt tota ducta ad extra receptam inter equidiſtantem & ſectionem ſic factæ ſectiones lineæ ſub ſectionibus & tactus coniungente.

℃Sint contrapoſitæ.a.b.quarum centrum.g.tangentes autem.a.d.&.b.d. & coniungatur.a.b.&.g.d.e. igitur.a.e.eſt equalis.e.b.& ex.d.ad.a.b.ducatur.z.d.h.ab.e. vero vt contingit.t.e.&.c.l. Dico q; eſt vt.t.l.ad.l.c./t.e.ad.e.c.ducantur ex.t.&.c.ad.a.b.l.m.n.x./c.o.p.ad.a.d.vero.t.r./c.s.& ducatur.a.g.x.ꝛ.qñ igitur in equidiſtantes.x.m.&c.p.ductæ ſunt.x.a.y./m.a.p.eſt vt.x.a.ad.a.x.m.d.ad.a.p. Sed vt.x.a.ad.a.y./t.e.ad.e.c./vt autem.t.e.ad.e.c./t.n.ad.c.o.propter ſimilitudinem trigonum.t.e.n.&.c.e.o.vt igitur.t.n.ad.c.o./m.a.ad.a.p.igitur & vt quod fit ex.t.n.ad id quod fit ex.c.o.quod fit ex.m.a.ad id quod fit ex.a.p.Sed vt quod fit ex.t.n.ad id quod fit ex.o.c.trigonum.t.r.o.ad.c.s.o.vt autem quod fit ex.m.a.ad id quod fit ex.a.p.trigonum.x.m.a.ad.a.y.p.igitur & vt.t.n.r.ad.c.o.s./m.x.a./a.y.p.equale autem.t.n.r./x.a.m.&m.n.d.&.s.o.c./a.y.p./d.o.p. Igitur & vt.x.m.a.cum trigono.n.m.d.ad trigonum.a.y.p.cum trigono.p.d.o.ſic.x.m.a.trigonum ad trigonum.p.y.a.& reliquum igitur n.m.d.ad reliquum trigonum.d.o.p.eſt vt totum ad totum, Sed vt.x.m.a trigonum ad.a.y.trigonum quod fit ex.x.a.ad id quod fit ex.a.y.vt autem.m.d.n.ad.p.d.o.quod fit ex.m.n.ad id quod fit ex.p.o.Igitur & vt quod fit ex.m.n.ad id quod fit ex p.o.quod fit ex.x.a.ad id quod fit ex.a.y.vt autem quod fit ex.m.n.ad id quod fit ex.p.o.quod fit ex.y.d.ad id quod fit ex.o.d.vt autem quod fit ex.x.a.ad idquod fit ex.a.y.quod fit ex.t.e.ad id quod fit ex.e.c.vt autem quod fit ex.n.d.ad id quod fit ex.d.o.quod fit ex.t.l.ad id quod fit ex.l.c.Igitur & vt quod fit ex.t.e.ad id quod fit ex.e.c.quod fit ex.t.l.ad id quod fit ex.l.c.eſt igitur vt.t.e.ad.e.c./t.l.ad.l.c.

℞ ℞ ſolida 917 p̄ ℞ congruente 349 m̄ ꝯ p̄ ℞ congrua 246 p̄ ꝯ ꝯ m̄ ℞ $\frac{47}{63}$

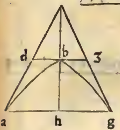


℞ ℞ Cubica quadrata de ꝯ p̄ ℞ 12500 m̄ ℞ ſolida 44 $\frac{1}{4}$ p̄ 930 m̄ 8

¶ Propoſitio, Quadrageſimaprima.

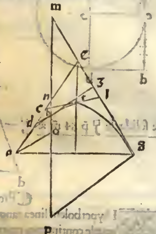
SI Parabolem tres lineę tangẽtes coincidãt inuicẽ eandẽ rationem ſecabũtur. ¶ Sit Parabole.a.b.g.tangentes autem.a.d.e./e.z.g./d.b.z. Dico ꝙ eſt vt.g.z. ad.z.e./e.d.ad.d.a.&.z.b.ad.b.d.cõiungatur.n./a.g.& ſecetur in duo ad.h.manifeſtum igitur ꝙ diameter ab.e.ad.h.eſt ſectionis, Si igitur per.b.venit.e.z.equidiſtans.a.g.& in duo ſecabitur ad.b.ab.e.c.& propter hoc.a.d.equalis eſt.d.e.&.g.z./z.e.& manifeſtum eſt queſitum, Non veniat per.b.ſed per.t.& ducatur per.t.ad.a.g./t.l.c.tangent igitur ſectionem ad.t.& per dicta.a.c.eſt equalis.c.e.&.l.g./l.e.ducatur per b.ad.e.h./m.n.b.x.per.a.vero &.g.ad.d.z./a.o.&.g.p.qñ igitur.m.b.equidiſtans eſt e.t.diameter eſt.m.b.&.d.z.tangit ad.b.applicatę igitur ſunt.a.o.&.g.p.& quoniã eſt diameter.m.b.tangens autem.g.m.applicata autem.g.p.erit.m.p.equalis.b.p.quare &.m.z./z.g.& quoniã.m.z.equalis eſt.z.g.&.e.l./l.g.eſt vt.m.g.ad.g.z./e.g.ad.g.l.& inuicem vt.m.g.ad.g.e./z.g.ad.g.l.Sed vt.m.g.ad.g.e./x.g.ad.g.h.Igitur & vt.z.g.ad.g.l./z.g.ad.g.h.vt autem.h.g.ad.g.a./l.g.ad.g.e.dupla igitur vtraqꝫ vtriuſqꝫ, per equum igitur vt.a.g.ad.g.x./e.g.ad.g.z.& conuertenti vt.e.g.ad.e.z./g.a.ad.a.x.diuidenti vt.g.z.ad.z.e./g.x.ad.z.a.rurſus quoniã diameter eſt.m.b.& tãgẽtes.a.n.&

applicata.a.o.equalis eſt.n.b./b.o.&.y.d./d.a. eſt autem &.e.c./c.a. Igitur vt.a.e.ad.a.c./n.a.ad.a.d.viciſſim vt.e.a.ad.a.n./c.a.ad.a.d. Sed vt.e.a.ad.a.n./h.a.ad.a.x. Igitur & vt.e.a.ad.a.d./h.a.ad.a.x.eſt autem & vt.g.a.ad.a.h./e.a.ad.a.c.dupla igitur vtraq; vtriuſq; per equum igitur vt.g.a.ad.a.x./e.a.ad.a.d. diuidenti vt.g.x.ad.x.a./e.d.ad d.a.demonſtratum autem eſt vt.g.x.ad.x.a./g.z.ad.z.e. Igitur vt.g.z.ad.z.e./e.d.ad.a.d.rurſus quoniam eſt vt.g.x.ad.x.a./g.p.ad.a.o.& eſt.g.p.quidē dupla.b.z. quoniam &.g.m./m.z.&.a.o./b.d. quoniam & .a.n./n.d. Igitur vt.g.x.ad.x.a./z.b.ad.b.d.&.g.z.ad.z.e.&.e.d.ad.d.a.



℞ ℞ ſolida 15863 p̄ ℞ congruente 49

℞ Cuba 1600 p̄ ℞ 4096

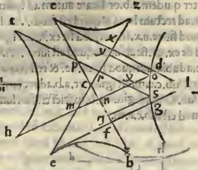


Propoſitio, Quadrageſima ſecunda.

SI hyperbole vel defectioni vel circuli circunferentiæ vel contrapoſitis a ſumitate diametri ducantur ordinate applicatæ alia autem quædam vt contingit ducatur, tangens ſecabit ab ipſis lineas equale continentes quartæ parti ſpeciei ad eandem diametrum.

Sit.n.quædam predictarum ſectionum, cuius diameter .a.b.&.ab.a.&.b. ducantur ordinate applicatæ .a.g.&.d.b.alia autem ſilicet.g.e.d. tangat ad.e. Dico q̄ id quod eſt ſub.a.g.&.b.d.equale eſt quartæ parti ſpeciei ad.a.b.Sit.n.cētrum.z.& per ipſum ducatur ad.a.g.&.b.g./z.h.t. qñ igitur /a.g.&.b.d.equidiſtantes, eſt autem &.z.h. equidiſtans coniuncta igitur diameter eſt linea.b. quare quod fit ex.z.h.equale eſt quartæ parti ſpeciei ad.a.b. Si quidem igitur.z.h.in defectione & circulo per.e.venit equales fiunt.a.g./z.h./b.d.& manifeſtum inde q̄ id quod eſt ſub.a.g.&.b.d.equale eſt ei quod fit ex.z.h. Idem quartæ parti ſpeciei ad.a.b.non veniat vtriq; & coincidant.d.b.&.b.a.productæ ad.c.& per.e.ad.a.g. ducatur.e.l.ad.a.b. autem/c.m./qñ igitur equale eſt quod eſt ſub.c.z.l. ei quod fit ex.a.z.eſt vt.c.z.ad.z.a./z.a.ad.z.l.& c.a.ad.a.l.eſt autem vt.c.z.ad.z.a.idem ad.z.b. econuerſo vt.b.z.ad.z.c./l.a.ad.a.c. componenti vel diuidenti vt.b.c.ad.c.z./l.c.ad.c.a. Igitur & vt.d.b.ad.z.t./c.l.ad.g.a.quod igitur eſt ſub.d.b.&.g.a.equale eſt ei quod eſt ſub.z.t./c.l.idem ei quod eſt

℞ 2916 p̃ ℥ m̃ ℞ 14931 131/491



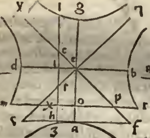
l ℞ ſoluta 5841 1214/1456

ℂPropoſitio, Vigeſimaquarta.

SI in contrapoſitis ad coniunctionem a centro ducantur ad ſectiones duo lineę & dicatur ipſarum altera tranſuerſa diameter, alt·ra recta, ducanturq́ quedam ad diametros coincidentes inuicem & ſectionibus, Contactio vero fit linearum in loco qui eſt inter quatuor ſectiones contentum ſub ſectionibus equidiſtātis lateri cum eo ad quod rationē habet quod eſt ſub ſectionibus equidiſtātis recto eam quam quod fit ex recta ad tetragonum quod fit ex tranſuerſa, equale erit tetragono quod bis fit ex dimidio tranſuerſi.

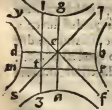
ℂSint contrapoſitę ad coniunctionem.a.b.g.d.quarum quidem centrum.e.& ab.e.ducantur.a.e.g.tranſuerſa &.d.e.b.recta, & ad.a.g.&.d.b. ducantur.z.h.t./i.c.l./m.n.x./o.p.r.coincidentes inuicem ad.x. Sit autem prius.x.intra angulū qui eſt ſub.s.e.f. vel ſub.y.e.ꝗ.Dico q̄ id quod eſt ſub.z.x.l.cum eo ad quod rationem habet quod eſt ſub m.x.r.eam quā quod fit ex.d.b.ad id quod fit ex.a.g.equale eſt eo quod fit ex.a.e.bis, ducatur.n.non tangentes ſectiones.s.e.ꝗ./y.e.f. & per.a.tangens ſectionē.a.h.s.f.qm̄ igitur quod eſt ſub.s.a.f.equale eſt ei quod fit ex.d.e.eſt igitur vt quod eſt ſub.s.a.f.ad id quod eſt ſub.e.a.ſic quod fit ex.d.e.ad id quod fit ex.e.a.quod autem eſt ſub.s.a.f.ad id quod fit ex.a.e.rationem habet compoſitā ex ratione.s.a.ad.a.e.& ratione.f.a.ad a.e.Sed vt.f.a.ad.a.e./n.x.ad x.t.vt autem.f.a.ad.a.e./p.x.ad.x.c.ratio igiť eius quod fit ex.d.e.ad id quod fit ex.a.e.Componitur ex ratione.n.x.ad.x.t.& ratione.p.x.ad.x.c.Componitur autem ex eiſdem ratio eius quod eſt ſub.p.x.n.ad id quod eſt ſub.c.x.t.& ut igitur quod fit ex.d.e.ad id quod fit ex.a.e.quod fit ex.d.e.cum eo quod eſt ſub p.x.n.ad id quod fit ex.a.e.cum eo quod eſt ſub.c.x.t.equale autem quod fit ex.d.e.ei quod eſt ſub.p.m.n.idem ei quod eſt ſub.r.n.m.quod autē fit ex.a.e.equale eſt ei quod eſt ſub.c.z.t.idem quod eſt ſub.l.t.z.ut igitur quod fit ex.d.e.ad id qđ fit ex.e.a.quod eſt ſub.p.x.n.cum eo quod eſt ſub.r.n.m.ad id quod eſt ſub.c.x.t.cum eo quod eſt ſub l.t.z.equale autem quod eſt ſub.p.x.n.cum eo quod eſt ſub.r.n.m.ei quod eſt ſub.r.x.m.ad id quod eſt ſub.c.x.t.cum eo quod eſt ſub.c.z.t.demonſtrandum eſt igitur q̄ id quod eſt ſub.z.x.l.cum.c.x.t.& eo quod eſt ſub.c.z.t.equale eſt ei quod bis fit ex.e.a.Commune auferatur quod fit ex.a.e.idem quod eſt ſub.c.z.t.Relinquitur igitur de-

monſtrandum ꝙ id quod eſt ſub.c.x.t. cum eo quod eſt ſub.l.x.s. equale eſt ei quod fit ex.a.e.eſt autem. Nam quod eſt ſub.c.x.t.cum eo quod eſt ſub.l.x.z.equale eſt ei quod eſt ſub.l.t.z.idem ei quod eſt ſub.c.z.t.idem quod fit ex.a.e.Coincidãt vtiq̃.z.l.&.m. r.vni non tangentiũ ad.t.equale vtiq̃ eſt quod eſt ſub.z.t.l.ei quod fit ex.a.e. & quod eſt ſub.m.t.r.ei quod fit ex.d.e.eſt igit̃ vt quod fit ex.d.e. ad id quod fit ex.e.a.quod eſt ſub.m.t.r.ad id quod eſt ſub.z.t.l.quare quod eſt bis ſub.z.t.l.equale querimus ei quod fit bis ex.a.e.eſt autem, Sit autẽ.x.intra ãgulũ qui eſt ſub.s.e.c.vel ſub.f.e.t. Erit vtiq̃ ſimiliter per cõiunctionẽ rationũ, vt quod fit ex.d.e.ad id quod fit ex.e.a.quod eſt ſub.p.x.n.ad id quod eſt ſub.c.x.t.ei vero quod fit ex.d.e. eq̃le eſt quod eſt ſub.p.m.n.idẽ quod eſt ſub.r.n.m.ei uero quod fit ex.a.e.equale eſt quod eſt ſub.l.t.z.eſt igitur ut quod eſt ſub.r.n.m.ad id quod eſt ſub.l.t.z.ſic ablatũ quod eſt ſub.p.x.n.ad ablatum quod eſt ſub.c.x.t.& reliquũ igitur qđ eſt ſub.r.x.m.ad reliquũ exceſſum quo ſuperat id quod fit ex.a.e.Illud quod eſt ſub.c.x.t.demõſtrãdũ igitur ꝙ id quod eſt ſub z.x.l.accipiẽs exceſſum quo ſuperat quod fit ex.a.e.illud quod eſt ſub.c.x.t.equale eſt ei quod fit bis ex.a.e.Cõmune auferatur quod fit ex.a.e.idem quod eſt ſub.z.t.l.reliquum igitur demonſtrandum ꝙ id quod eſt ſub.c.x.t.cum exceſſu quo ſuperat quod fit ex.a.e.Illud quod eſt ſub.c.x.t.equale eſt ei quod fit ex.a.e. Eſt autem, Nam minus quod eſt ſub.c.x.t.accipiens exceſſum equale eſt maiori quod fit ex.a.e.

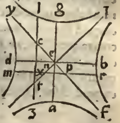


℞ cuba 48116 m̃ ℞ de ℈ ℈ p̃ 43

℞ 824 p̃ ℈ m̃ ℞ 44983



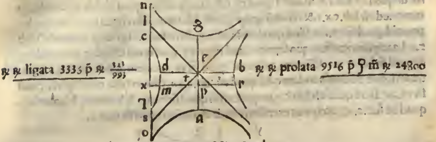
℞ ℞ cubica quadrata 9999 p̃ 24



ℭPropoſitio, Vigeſimaquinta.

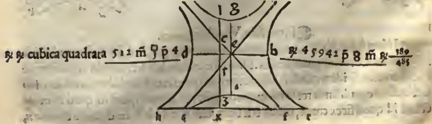
EIſdem ſubiectis ſit contactio equidiſtantium.a.g.&.b.d.intra alteram ſectionum.d.b.vt ſupponitur ad.x. Dico Contentum ſub ſectionibus equidiſtantis tranſuerſo idem quod eſt ſub.o.x.n.eo ad quem rationem habet contentum ſub ſectionibus equidiſantis recto idem quod eſt ſub.r.x.m.eam quam id quod fit ex recta ad id quod fit ex curua, maius erit tetragono quod bis fit ex dimidio tranſuerſi,

Per eadem,n,eſt vt quod fit ex,d,c,ad id quod fit ex,e.a.qđ eſt ſub.p.m.t.ad id quod eſt ſub,s,x,l,equale autem quod fit ex,d,c.ei quod eſt ſub.p,m,t.quod vero fit ex.a e,ei quod eſt ſub.l,o,s.& vt igitur quod fit ex.d,c,ad id quod fit ex.a,e.quod eſt ſub,p,m, t.ad id quod eſt ſub,l.o,s.& quoniã eſt vt totum quod eſt ſub,p,x,t,ad totum quod eſt ſub,l,x,s,ſic ablatum quod eſt ſub.p.m.t.ad ablatum quod eſt ſub,l.o,s,idem quod eſt ſub.n,s,o.& reliquum igitur quod eſt ſub.r,x.m.ad reliquum quod eſt ſub.ꝛ.x.c.eſt vt quod fit ex.d,c.ad id quod fit ex,a.e.demonſtrandum igitur ꝙ id quod eſt ſub.o,x.n. eo quod eſt ſub.ꝛ,x.c.maius eſt eo quod bis fit ex.a.e.Cõmune auferatur quod eſt ſub ꝛ.x.c,reliquum igitur demonſtrandum ꝙ id quod eſt ſub,o.ꝛ.n,equale eſt ei quod fit bis ex,a.c,Eſt autem,



❡Propoſitio, Vigeſimaſexta.

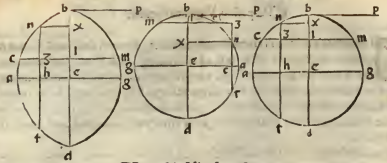
SI vero Contactio ad.x.equidiſtantium ſit intra alteram ſectionum.a.g.vt ſupponitur contentum ſub ſectionibus equidiſtantis tranſuerſo,idem quod eſt ſub.l. x.z.eo ad quod rationem habet quod eſt ſub reliqua ſectiõum idem quod eſt ſub r.x.h.ea quam quod fit ex recta ad id qđ fit ex curua,minus erit tetragono quod bis fit a dimidia tranſuerſi,qñ.n.per eadem que prius eſt vt quod fit ex.d,e.ad id quod fit ex e.a,quod eſt ſub,f.x.s.ad id quod eſt ſub.c,x.t.& totũ igitur quod eſt ſub.r.x.h.rationem habet eius quod fit ex recto ad id quod fit ex tranſuerſo ad quod eſt ſub.c.x.t.cum eo quod fit ex.a.e.demonſtrãdum igitur ꝙ id quod eſt ſub.l.x.z.eo quod eſt ſub.c,x.t. cum eo quod fit ex.a.e.minus eſt eo quod bis fit ex.a e.Commune auferatur quod fit ex,a.e.reliquum igitur demonſtrandum ꝙ id quod eſt ſub.l.x.z.eo quod eſt ſub.c,x.t. minus eſt eo quod fit ex.a.e.idem quod eſt ſub.l.t.z.Eſt autẽ quod.n.eſt ſub.l.t.z.cum eo quod eſt ſub,l.x.z.equale eſt quod eſt ſub.c.x.t.



ℭ Propoſitio, Vigeſimaſeptima.

SI defectionis uel circuli circunferentię coniunctę diametri ducātur & dicatur earum altera recta altera trāſuerſa, & ad ipſas ducantur duo lineę coincidentes inuicem & lineę tetragona que fiūt ex acceptis lineis in lineā ad trāſuerſam ductam inter contactionem linearum & lineę accipientia que fiunt ex acceptis lineis in lineā ad rectam ductam inter cōtactionē & lineam ſimiles & ſimiliter deſcriptę ſpecies ſubiectæ speciei ad rectam diametrum, equalia erunt tetragono quod fit ex tranſuerſa diametro.

ℭ Sit .n. defectio uel circuli circunferentia .a.b.g.d. cuius centrum .e. & ducatur ipſius duo coniunctę diametri, recta quidem .a.e.g. tranſuerſa autē .b.e.d. & ad .a.g. & .b.d. ducantur .n.z.h.t. & .c.l.z.m. Dico ꝙ tetragona que fiunt ex .n.z. & .z.t. accipientia que fiunt ex .c.z. & .z.m. ſpecies ſimiles & ſimiliter deſcriptæ ſpeciei que eſt ad .a.g. Equalia ſunt tetragono quod fit ex .b.d. ducatur ab .n. ad .a.e. .n.x. ordinate igitur applicata eſt ad .b.d. Igitur & vt .b.p. ad .b.d. quod fit ex .a.g. ad id quod fit ex .b.d. quod autem fit ex .b.d. equale eſt ſpeciei quæ eſt ad .a.g. eſt igitur vt .b.p. ad .b.d. tetragonum quod fit ex .a.g. ad ſpeciem quæ fit ex .a.g. vt autem □nū quod fit ex .a.g. ad ſpeciem quæ fit ex .a.g. □nū quod fit ex .n.x. ad ſpeciem quæ fit ex .n.x. ſimilem ſpeciei quæ eſt ad .a.g. Igitur & vt .p.b. ad .b.d. □nū quod fit ex .n.x. ad ſpeciem quæ fit ex .n.x. ſimilem ſpeciei quæ eſt ad .a.g. eſt autem & vt .b.p. ad .b.d. quod fit ex .n.x. ad id quod eſt ſub .b.x.d. equalis igitur eſt ſpecies quæ fit ex .n.x. idem quod fit ex .z.l. ſimile ſpeciei quæ eſt ad .a.g. ei quod eſt ſub .b.x.d. ſimiliter vtiꝗ demonſtrabimus ꝙ ſpecies quæ fit ex .c.l. ſimilis ſpeciei quæ eſt ad .a.g. equalis eſt ei quod eſt ſub .b.l.d. & quoniam recta .y.t. ſecata eſt per equalia quidem ad .h. in inequalia vero ad .z. □na quæ fiunt ex .t.z. & .z.n. dupla ſunt eorum quæ fiunt ex .t.h. & .h.z. idem eorum quæ fiunt ex .n.h. & .h.z. per eadem vtiꝗ □na quæ fiunt ex .m.z. & .z.c. dupla ſunt □rū quæ fiunt ex .c.l.z. & ſpecies quæ fiunt ex .m.z.c. ſimilia ſpeciei quæ ſunt ad .a.g. dupla ſunt ſimilium ſpecierum quæ fiunt ex .c.l.z. equales vero ſunt ſpecies quæ fiunt ex .c.l.z. his quæ ſunt ſub .b.x.d. & .b.l.d. □na autem quæ fiunt ex .h.h.z. his quæ fiunt ex .x.e.l. Igitur □na quæ fiunt ex .n.z.t. cum ſpeciebus quæ fiunt ex .c.z.m. ſimilibus ſpeciei quæ eſt ad .a.g. dupla erunt eorum quæ ſunt ſub .b.x.d. & .b.l.d. & eorum quæ fiunt ex .x.e.l. & quoniam recta .b.d. ſecata eſt per equalia quidem ad .e. in inequalia vero ad .x. quod eſt ſub .b.x.d. cum eo quod fit ex .x.e. equale eſt ei quod fit ex .b.e. ſimiliter autem & quod eſt ſub .b.l.d. cum eo quod fit ex .l.e. equale eſt ei quod fit ex .b.e. quare quæ ſunt ſub .b.x.d. & quæ ſunt ſub .b.l.d. & quæ fiunt ex .x.e. & .l.t. equalia ſunt ei quod bis fit ex .b.e. Igitur □na quæ fiunt ex .n.z.t. cum ſpeciebus quæ fiunt ex .c.z.m. ſimilibus ſpeciei quæ eſt ad .a.g. dupla ſunt eius quod bis fit ex .b.e. eſt autem & quod fit ex .b.d. duplum eius quod fit ex .b.e. Igitur □na quæ fiunt ex .n.z.t. accipientia ſpecies quæ fiunt ex .c.z.m. ſimiles ſpeciei quæ eſt ad .a.g. equalia ſunt ſpeciei quæ fit ex .b.d.

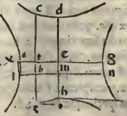


Propoſitio, Vigeſimaoctaua.

SI in contrapoſitis ad cõiunctionẽ cõiunctę diametri ducãtur & dicatur eorum altera quidẽ recta, altera vero tranſuerſa ducãtur aũt ad ipſas duo lineę coincidentes inuicem & ſectionibus □na que fiunt ex receptis lineis in lineam ad rectam ductam inter cõtactionẽ linearum & ſectionum ad □na que fiunt ex receptis lineis in lineam ad trãſuerſam ductã inter contactionẽ linearum & ſectiõum rationem habent eam quã □mũ quod fit ex recta ad □nũ quod fit ex trãſuerſa.

Sint ad cõiunctionẽ cõtrapoſitę.a.b.g.d.diametri aũt ipſarũ recta quidẽ.a.e.g. trãuerſa vero.b.e.d. & ad ipſas ducãtur .z.h.t.c./h.l.m.n. ſecãtes inuicem & ſectiões. Dico ꝙ □na que fiunt ex.l.h.n.ad eã que fiunt ex.z.h.c. ratiomẽ habẽt eius quod fit ex.a.g. ad id quod fit ex.b.d. ducãtur.n.ab,z. &.l,ordinate.l.x.&.z.o. equidiſtãtes.n.ſunt.a.g.&.b.d.& ex.b.ducaẽ.b.p.recta.b.d.manifeſtũ vtiqꝫ ꝙ eſt vt.p.b.ad.b.d. que fiũt ex a.g.ad id quod fit ex.b.d.& quod fit ex.a.e.ad id quod fit ex.e.b.& quod fit ex.z.o.ad id quod eſt ſub.b.o.d.& quod eſt ſub.g.x.a.ad id quod fit ex.l.x.eſt igitur vt vnũ pręeuntiũ ad vnũ ſequentiũ ſic omnia pręeuntia ad omnia ſequentia vt igitur quod fit ex a.g.ad id quod fit ex.b.d.quod eſt ſub.g.x.a.cum eo quod fit ex.a.e.& eo quod fit ex o.z.idem eo quod fit ex.e.t.ad id quod eſt ſub.d.o.b. cũ eo quod fit ex.b.e.& eo quod fit ex.l.x.idẽ quod fit ex.m.e.ſed qđ eſt ſub.g.x.a.cũ eo quod fit ex.a.e.eq̃le eſt ei quod fit ex.x.e.qđ vero eſt ſub.d.o.b. cũ eo qđ fit ex.b.e.eq̃le eſt qđ fit ex.o.e. vt igiẽ quod fit ex.a.g.ad id quod fit ex.b.d.que fiũt ex.x.h.t.ad ea que fiunt ex.o.e.m.idẽ que fiũt ex.l.m.h.ad ea que fiunt ex.z.t.h.& ſunt que fiunt ex.n.h.l.dupla eorũ que fiunt ex.l.m.h.vt demonſtratũ & eorum que fiunt ex.z.h.t.que fiunt ex.z.h.c. Igitur & vt quod fit ex.a.g.ad id quod fit ex.b.d.quod fit ex.l.h.n.ad ea que fiunt ex.z.h.c.

℞ de ♀ p̃ 24 m̃ ℞ ligata 17916

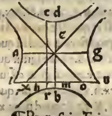


℞ cronica de ♀ p̃ 83 — 196/345

ℂPropoſitio, Vigeſimanona.

EIſdem ſubiectis ſi equidiſtás rectę ſecet nõ tangentes que fiũt ex receptis lineis in lineam ad rectam ductã inter contactionẽ linearum & non tangẽtes accipientia dimidium tetragoni quod fit ex recta ad □ᵐᵃ que fiũt ex receptis in lineam ad tranſuerſam ductam inter cõtactionem linearum & ſectiões rationem habent eam quam □ⁿᵈ quod fit ex recta ad □ⁿᵘ quod fit ex tranſuerſa.

ℂSit.n.eadẽ que prius &.m.l.ſecet nõ tangẽtes ad.x.&.o. Demonſtrandũ ꝗ que fiunt ex x.h.o.accipientia dimidiũ eius quod fit ex.a.g.idem quod bis fit ex.e.a.idẽ quod bis fit ex.l.x.n.ad ea que fiunt ex.z.h.c.rationem habẽt eã quã quod fit ex.a.g.ad id quod fit ex.b.d. qñ igiť.l.x.a.eq̃lis eſt.o.n. que fiunt ex.l.h.n.ſuperãt que fiunt ex.x.h.o.eo quod bis eſt ſub.n.x.l.que vero fiunt ex.l.h.n.ad ea que fiunt ex.h.o.rationẽ habẽt eã quã quod fit ex.a.g.ad id qđ fit ex.b.d. Igiť & que fiunt ex.x.h.o.cũ eo qđ bis fit ex e.a.ad ea que fiunt ex.z.h.c.rationẽ habẽt eã quã qđ fit ex.a.g.ad id quod fit ex.b.d.

℞ prolata 4964 p̄ ℞ 225 

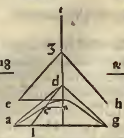
℞ ℞ cronica 2243 m̄ ℞ 4913 $\frac{187}{486}$

ℂPropoſitio, Trigeſima.

SI hyperbolẽ duo lineę tangẽtes coincidãt & per tactũ quidẽ linea producať per cõtactionẽ vero ducať linea ad quandã nõ tangẽtiũ ſecãs ſectionẽ & tactus coniungentẽ,que eſt inter cõtactionẽ & tactus cõiungentẽ in duo ſecabiť a ſectiõe.

ℂSit hyperbole.a.b.g.& tangentes.a.d.g.non tangentes vero.c.z.h.& cõiungatur.a.g. & per.d.ducatur.d.c,l.ad.z.b. Dico ꝗ.d.c.equalis eſt.c.l.cõiungatur.n.z.d.& producatur in vtranq; & ponatur.z.t.equalis.b.z.& per puncta.b.&.c.ad.a.g.ducatur.b.e.&.c.n.ordinate igitur applicatę ſunt,& quoniam ſimile eſt.b.c.z.trigonum.d.n.c.eſt igitur vt quod fit ex.d.n.ad id quod fit ex.n.c.quod fit ex.b.z.ad id quod fit ex.b.e. vt autem quod fit ex.b.z.ad id quod fit ex.b.e.ſic.t.b.ad rectam, Igitur & vt quod fit ex.d.n.ad id quod fit ex.n.c./t.b.ad rectam,Sed vt.t.b.ad rectam ſic quod eſt ſub.t.n.b.ad id quod fit ex.n.c.Igitur & vt quod fit ex.d.n.ad id quod fit ex.n.e.quod eſt ſub t.n.b.ad id quod fit ex.n.c.equale igitur eſt quod eſt ſub.t.n.b.ei quod fit ex.d.n.eſt autem & quod eſt ſub.m.z.d.equale ei quod fit ex.z.b.propterea ꝗ.a.d.tangit,&.a.m.applicata eſt quare & quod eſt ſub.t.n.b.cum eo quod fit ex.z.b.equale eſt ei quod eſt ſub.m.z.d.cum eo quod fit ex.d.n.quod vero eſt ſub.t.n.b.cũ eo quod fit ex.z.b.equale eſt ei quod fit ex.z.n.Igitur & quod eſt ſub.m.z.d.cum eo quod fit ex.d.n.equale eſt ei quod fit ex.z.n.Igitur.m.d.in duo ſecatur ad.n.adiacentem habens.d.z.& equidiſtantes ſunt.c.n.&.l.m.igitur.d.c.equalis eſt.c.l.

℞ cuba 4?9 p̄ ℞ ſolida 513 p̄ 18



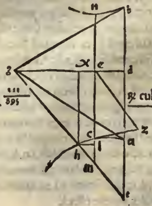
℞ ſolida 3389 p̄ ℞ ? ? p̄ R· $\frac{45}{94}$

¶Propoſitio, Trigeſimaprima.

SI cõtrapoſitas duo lineę tangẽtes coincidãt & per tactus linea producaꝰ per con tactionẽ vero ducaꝰ linea ad nõ tangentẽ ſecãs ſectionẽ & tactus cõiungentem, que eſt inter cõtactionẽ & tactus cõiungentem in duo ſecabitur a ſectione.

¶Sint cõtrapoſitę.a.b. tangẽtes vero.a.g.b. & cõiuncta.a.b. producaꝰ nõ tangẽs vero ſit.z.e.& per.g.ad.z.e.ducaꝰ.g.h.t. Dico ꝙ.g.h.equalis eſt.h.t.& cõiungaꝰ.g.e.& pro ducatur ad.d.& per.e.&.h.ad.a.b.ducãtur.e.c.m.n.&.h.x.per.h. vero &.c.ad.g.d./c. z.&.h.l.qm̃ ſimile eſt.c.z.e./m.l.h.eſt vt quod fit ex.e.c.ad id quod fit ex.c.z.quod fit ex.m.l.ad id quod fit ex.l.h.vt aũt quod fit ex.e.c.ad id quod fit ex.c.z.demõſtratum eſt quod eſt ſub.n.l.c.ad id quod fit ex.l.h.equale igitur quod eſt ſub.n.l.c.ei quod fit ex.m.l. Cõmune apponaꝰ quod fit ex.c.e.quod igitur eſt ſub.n.l.c.cum eo quod fit ex c.e.idẽ quod fit ex.l.e.idẽ quod fit ex.h.x.equale eſt his que fiunt ex.m l.&.c.e.vt aũt quod fit ex.h.x.ad id quod fit ex.m.l.&.c.r.ſic quod fit ex.x.g.ad id quod fit ex.l.b.& c.z.equale igitur eſt quod fit ex.x.g.his que fiunt ex.h.l.&.c.z.equale autem eſt quod fit ex.l.h.ei quod fit ex.x.e.& quod fit ex.c.z.ei quod fit ex dimidia ſecundę diame tri idem ei quod eſt ſub.g.e.d.quod igitur fit ex.g.x.equale eſt & ei quod fit ex.x.c.& ei quod eſt ſub.g.e.d. Igitur.g.d. in equalia ſecatur ad.x.in inequalia vero ad.e.& eſt d.t.equidiſtans.h.x. Igitur.g.h.equalis.h.t.

℞ ℞ ſolida 1498? p̄ ? m̃ ℞ $\frac{???}{895}$



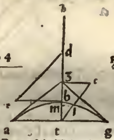
℞ cuba & ſolida 4989 p̄ $\frac{??}{95}$

Propoſitio, Trigeſima ſecunda.

SI hyperbolem duo lineæ tangentes coincidant & per tactus linea producatur per contactionē vero tāgentiū ducatur linea ad tactus cōiungentē & per ſectionem per medium coniungētis tactus ducatur linea ad quandā non tangentium recepta inter ſectionem per medium & equidiſtantem in duo ſecabitur a ſectione.

Sic hyperbole.a.b.g.cuius centrum.d.non tangens autem.d.e. & tangant.a.z.&.z.g. & coniungatur.g.a.&.z.d.& producatur ad.h.&.t.manifeſtum vtiq; q.a.t.equalis eſt t.g.ducatur vtiq; per.z./z.c.ad.a.g.per.t.vero/t.l.c.ad.d.e. Dico q.c.l.equalis eſt.t.l. ducantur per.b.&.l.ad.a.g./l.m.&.b.e.eſt vtiq; vt prius demonſtratum eſt vt quod fit ex.d.b.ad id quod fit ex.b.e.& quod fit ex.t.m.ad id quod fit ex.m.l.& quod eſt ſub m.b.h.ad id quod fit ex.m.l.equale igitur quod eſt ſub.h.m.b.ei quod fit ex.m.t.eſt autem & quod eſt ſub.t.d.z.equale ei quod fit ex.d.b.propterea quod.a z tangit & applicata eſt.a.t.quod igitur eſt ſub.h.m.b.ei quod fit ex.m.t.eſt autem & quod eſt ſub t.d.z.equale ei quod fit ex.d.b./cum eo quod fit ex.d.b.quod eſt id quod fit ex.d.m. equale eſt ei quod eſt ſub.t.d.z.cum eo quod fit ex.m.t.in duo igitur ſecatur.z.t.ad.m. adiacētem habēs.d.z.& ſunt equidiſtātes.c.z.&.l.m.Igitur.c.l.equalis eſt.l.t.

℞ ſolida 454 p̄ ℞ ligita 839 p̄ 4



℞ ℞ de 9 p̄ ℞ ſciolta 433

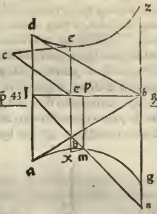
Propoſitio, Trigeſima tertia.

SI contrapoſitas lineę tangentes coincidant & per tactus quidem linea producatur per contactionem vero tangentium ducatur linea ad coniungentem tactus per ſectionem vero per medium coniungentis tactus ducatur linea ad quandam non tangentium coincidens ſectioni & ductæ per contactionem equidiſtanti, quę eſt inter ſectionem per medium & equidiſtantem a ſectione in duo diuidetur.

Sint contrapoſitę.a.b.g.&.d.e.z.& tangentes.a.h.&.d.h.cētrum autem.t.non tāgens vero.c.t.& cōiungatur.t.h.& producatur, cōiungatur aūt &.a.l.d.manifeſtū q; in duo ſecatur ad.l.ducatur per.c.&.t.ad.a.d./b.t.e.&.g.h.z.ad.t.c.vero per.l./l.m.Dico q.l. m.eſt equalis.m.n.applicentur.n.ab.e.&.m.ad.h.t./e.c.&.m.x.per.m.vero ad.a.d./m. p.qm̄ igitur per demonſtrata eſt vt quod fit ex.t.e.ad id quod fit ex.e.c.quod eſt ſub.b. x.e.ad id quod fit ex x.m.vt igitur quod fit ex.t.e.ad id quod fit ex.e.c.quod eſt ſub b.x.e.cū eo quod fit ex.t.e quod eſt quod fit ex.t.x.ad id quod fit ex.e.e.&.x.m.quod vero fit ex.e.e.equale demonſtratum eſt ei quod eſt ſub.h.t.l.& quod fit ex.x.m.ei

quod fit ex.t.p, eſt igitur vt quod fit ex.t.e.ad id quod fit ex.e.e.quod fit ex.t.x.idem quod fit ex.m.p, ad id quod eſt ſub.t.l, &.t.h.cum eo quod fit ex.t.p.vt autem quod fit ex.t.e.ad id quod fit ex.e.e.quod fit ex.m.p.ad id quod fit ex.p.l.vt igitur quod eſt ſub m, p.ad id quod fit ex.p.l.quod fit ex.m.p.ad id quod eſt ſub.h.t.l.cum eo quod fit ex t.p equale igitur quod fit ex.l.p.ei quod eſt ſub.h.t.l.cum eo quod fit ex.t.p.linea igitur.l.h.ſecatur in equalia quidem ad.p.in inequalia vero ad.t.& ſunt equidiſtantes.m.p,&.h.n, Igitur.l.m.ad.m.n,

℞ ℞ ſolida 9516 p̃ ℞ de ℞ ℞ p̃ 43



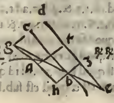
℞ ℞ cronica & ſolida 303

Propoſitio, Trigeſimaquarta.

SI hyperboles in vna non tangentium relictum ſit punctum & ab ipſo linea tãgat ſectionem & per tactus ducatur equidiſtans non tangenti, ducta per relictũ punctum equidiſtans alteri non tangentium a ſectione in equalia diuidetur.

Sit hyperbole.a.b.non tangentes autem.g.d.e.& relictum ſit in.g.d.contingens punctum.g.& per ipſum ducatur tangens ſectionem.g.b.e.& per.b.ad.g.d.ducatur.z.b.h.per.g.vero.g.a.h./d.e.Dico q.g.a.equalis eſt.a.h.ducatur.n.per.a./a.t.equidiſtans g.d.per.b.autem.b.c./.d.e.qm̃ igitur.g.b.equalis eſt.b.e.Igitur &.g.c.equalis.c.d,& d.z./z c.&quoniã quod eſt ſub.c.b.z.equale eſt ei quod eſt ſub.g.a.t.equalis autem.b.z./d.c.idem.g.c.&.a.t./d.g.quod igitur eſt ſub.d.g.t.equale eſt ei quod eſt ſub.c.g.h.eſt igitur vt.d.g.ad.g.c./g.h.ad.a.g.eſt autem.d.g.dupla.g.c.dupla igitur &.g.h./a.g.Igitur.g.a.equalis.a.n.

℞ ſolida 1615 m̃ 49 p̃ ℞ m̃ 8



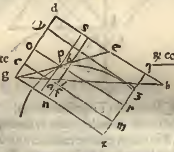
℞ ℞ congrua 424 p̃ ℞ ligata 512 p̃ 48

¶Propoſitio, Trigeſimaquinta.

Iſdem exiſtentibus, Si a relicto puncto linea quedam ducatur ſecãs ſectionem ad duo pũcta erit vt tota ad eã que extra recipit, ſectiões itus receptę lineę.

¶Sic.n.a.b.hyperbole &.g.d.e. non tangentes &.g.b.e.tangens &.t.b.equidiſtans & per.g.ducatur quedam linea.g.a.l.z.h.ſecãs ſectionem ad.a.z. Dico q̃ eſt vt.z.g.ad.g.a./z.l.ad.a.l. ducantur per.g.a.&.b.z.ad.d.e./g.n.x./c.a.f.m./o.p.b r./z.y.per.a.z.vero ad.g.d./a.p.s./z.t.r.m.x qñ igitur.a.g.eq̃lis eſt.z.h.Igitur &.c.a.equalis.ꝛ.h.&.c.a./d.s.Igitur &.ꝛ.h.equalis eſt.d.s.quare &.g.c./d.y.& quoniã.c.g.equalis eſt.d.y.&.d.c.equalis.g.y.vt igitur.d.c.ad.c.g./y.g.ad.g.c.vt aũt.y.g.ad.g.c./z.g.ad.g.a.vt autem.z.g.ad.g.a./m.c.ad.c.a.vt autem.m.c.ad.c.a./m.d.ad.d.a.vt vero d.c.ad.c.g./t.c.ad.c.n.& vt igitur.m.d.ad.d.a./t.c.ad.c.n.equale aũt.a.d./d.b.idem o.n.eſt.n./g.b.equalis.b.e.&.d.o./o.g.vt igitur.d.m.ad.o.n.& reliquum.m.t.ad te iquum.b.c.eſt vt totum.l.m.ad totum.o.n.Et quoniam.c.s.equale eſt.t.o.Cõmune auferatur.d.p.reliquum igitur.c.p.equale eſt.p.r.Cõmune apponatur.a.b.totum igitur c.b.equale eſt.a.r.eſt igitur vt.m.d.ad.d.a.ſic.m.t.ad.t.a. Sed vt.m.d.ad.d.a./m.c.ad c.a.idem.z.g.ad.g.a.vt autem.m.t.ad.t.a./m.f.ad.f.a.idem.z.l.ad.l.a. Igitur & vt.z.g.ad.g.a./z.l.ad.l.a.

℞ ſolida 429 p̄ ℞ cõgruẽte 2689 p̄ ℞ $\frac{1181}{4913}$



℞ congrua & cõgruẽte 2024

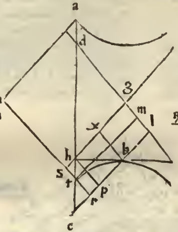
¶Propoſitio, Trigeſimaſexta.

Iſdem exiſtentibus, Si a puncto ducta linea neq; ſectionem ſecet ad duo puncta neq; equidiſtans ſit non tangenti, coincidet quidem contrapoſitæ ſectioni, erit autem vt tota ad eam que eſt inter ſectionem & equidiſtantem per tactum, que eſt inter contrapoſitam & non tangentem ad eam quæ eſt inter non tangentem & alteram ſectionem.

¶Sint contrapoſitæ.a.&.b.quarum centrum.g.non tangentes autem.d.c.&.z.h.& in.g.h.relictum ſit punctum.h.& ab ipſo ducatur.h.b.e.tangens &.h.t.neq; equidiſtans exiſtẽs.g.e.neq; ſectionem ſecans ad duo puncta demonſtratum eſt q̃.t.h.producta coincidit.g.d.& per hoc & ſectioni.a.Coincidat ad.a.& ducatur per.b./b.c.l.equidiſtans.g.h. Dico q̃ eſt vt.a.c.ad.c.t.ſic.a.t.ad.h.t.ducantur.n.ab.a.&.t.punctis ad.g.

b./t.m. &.a.n.ex.b.h.t. vero ad .d.e./b.x.h.p./t.r.s.n. qn̄ igitur.a.d.eſt equalis .h.t.eſt vt.a.h.ad.h.t./n.s.ad.s.t.vt autem.d.t.ad.r.h./g.s.ad.s.h.Igitur & vt.n.s.ad.s.t./g.s.ad s.h.Sed vt.n.s.ad.s.t./n.g.ad.g.t.vt autem.g.s.ad.s.h./r.g.ad.r.h.Igitur & vt.n.g.ad g.t./g.r.ad.r.h. & vt vnum ad vnum, ſic omnia ad omnia vt igitur.n.g.ad.g.t./totum n.l.ad.g.t.&.r.h. & quoniam.e.b.equalis eſt .b.h.&.l.b.equalis. eſt.b.p.&.l.x./b.h.& l.x.equale.g.t.Igitur &.b.h.equalis.g.t.eſt igitur vt.n.g.ad.g.t.ſic totum.l.n.ad.b.h. &.r.h.idem.r.x.eſt autem.r.x.equalis.l.t.quoniam &.g.t./b.g.&.m.b./x.t.eſt igitur vt n.g.ad.g.t.ſic.n.l.ad.l.t.Sed vt.n.g.ad.g.t./n.s.ad.s.t.idem.a.h.ad.h.t.vt autem.n.l. ad.l.t./n.r.ad.r.t.idem.a.c.ad.c.t.Igitur & vt.a.c.ad.c.t./a.h.ad.h.t,

℞ ſolida 729 p̄ ℞ congrua 1028 p̄ ℞ 4649



℞ 12500 m̄ ℞ ſolida 9643

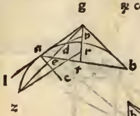
Propoſitio, Trigeſimaſeptima.

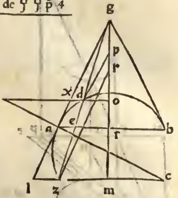
SI Coni ſectionem vel circuli circunferentiam vt contrapoſitarum duo lineæ tangentes coincidant, & in tactus ipſarum coniuncta linea, a contactione tangentium ducatur quedam ſecans lineá ad duo puncta, Erit vt tota ad extra receptam tactæ ſectiones a coniungente tactus.

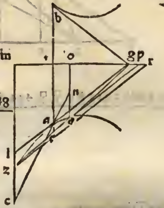
Sit coni ſectio.a.b. & tangentes.a.g.&.g.b. & coniungatur.a.b.& ducatur.g.d.e.z. Dico q̧ eſt vt.g.z.ad.g.d./z.e.ad.e.d. ducantur per.g.&.a.diametri ſectionis.g.t./a.c.per.z.vero &.d.ad.a.t.&.l.g./d.p./z.r.l.z.m./n.d.o.qn̄ igitur.l.z.m.equidiſtans eſt x.d.o.eſt vt.z.g.ad.g.d./l.z.ad.x.d.&.z.m.ad.d.o.&.l.m.ad.x.o.Igitur vt quod fit ex.l.m.ad id quod fit ex.x.o.quod fit ex.z.m.ad id quod fit ex.d.o.Sed vt quod fit ex l.m.ad id quod fit ex.x.o.trigonum.l.m.g.ad.x.o.g.vt autem quod fit ex.z.m.ad id quod fit ex.o.d.trigonum.z.r.m.ad.d.p.o.igitur & vt.l.g.m.ad.x.o.g./z.r.m.ad.d.o.p.& reliquum.l.g.r.z.quadrilaterum ad reliquum.x.g.p.d.equale autem eſt.l.g.r.z.quadrilaterum trigono.a.l.c./d.e.x.g.p.d./a.n.x.vt igitur quod fit ex.l.m.ad quod fit ex.x.o.trigonum.a.l.c.ad.a.n.x.Sed vt quod fit ex.l.m.ad id quod fit ex.x.o.quod fit ex.z.g.ad id quod fit ex.g.d.vt autem.a.l.c.ad.a.n.x.quod fit ex.l.a.ad id quod

fit ex.z.x. & quod fit ex.z.e.ad id quod fit ex.e.x. Igitur & vt quod fit ex.z.g.ad id quod fit ex.g.d. quod fit ex.z.e.ad id quod fit ex.e.d. & propter hoc vt.z.g.ad.g.d./z.e.ad.e.c.

℞ congruente : 4 p̃ ℞ de ʒ ʒ p̃ 4







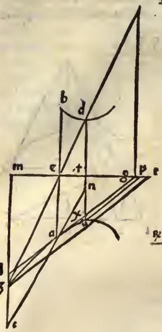
℞ ſolida 1624 p̃ 48

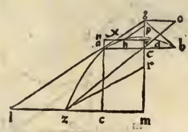
Propoſitio, Trigeſimaoctaua.

Iſdem exiſtentibus, Si per contactionem tangentium ducatur quedam linea ad coniungentem tactus & per medium coniungentis tactus ducta linea ſecat ſectionem ad duo puncta & per contactionem equidiſtantem coniungentis tactus, Erit vt tota ducta ad extra receptam inter ſectionem & equidiſtantem factæ ſectiones a coniuncta in tactus.

Sit a.b.ſectio & a.g.&.b.g. tangentes & a.b.tactus coniungens & a.n.&.g.m. diametri, manifeſtum quod a.b.in duo ſecatur ad.e.ducatur ex.g./g.o.equidiſtans.a.b.& ducatur per.e./z e.o.d.Dico quod eſt vt.z.o.ad.o.d./z.e.ad.e.d. ducantur.ex.z.d.ad.a.b./l.z.c.m./d.t.h.z.n.per.z.vero &.h.ad.l.g./z.r./h.p.ſimiliter his que prius demonſtrabitur quod eſt vt quod fit ex.l.m.ad id quod fit ex.x.t.quod fit ex.l.a.ad id quod fit ex.a.x.& eſt vt quod fit ex.l.m.ad id quod fit ex.x.t.quod fit ex.l.g.ad id quod fit ex.g.x.& quod fit ex.z.o.quod fit ex.o.d.vt autem quod fit ex.l.a.ad id quod fit ex.a.x.quod fit ex.z.e.ad id quod fit ex.e.d.vt igitur quod fit ex.z.o.ad id quod fit ex.o.d.quod fit ex z.e.ad id quod fit ex.e.d.& vt.z.o.ad.o.d./z.e.ad.e.d.

℞ ℞ ſolida 1233 m̃ ℞ congruente 49 1/3 p̃ 5/6



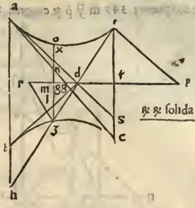


℞ ℞ ſolida 2816 p̃ ℞ 464 m̃ ℞ 41/54 p̃ 18

ℂPropoſitio, Trigeſimanona.

SI contrapoſitas duo lineæ tangentes coincidant & per tactus linea producatur, a contactione tangentium ducta linea ſecat vtranq; ſectionem, & coniungentem tactus, Erit vt tota ducta ad extra receptam inter ſectionem & coniungenem tactus, ſic factæ ſectiones lineæ ſub ſectionibus & contactione tangentium.

ℂSint cõtrapoſitæ .a.b. quarũ centrũ .g. tangẽtes autẽ .a.d. &.d.b. & cõiunctę .a.b./& g.d. producať & per .d. ducatur quedã linea .e.d.z.h. Dico q̧ eſt vt .e.h. ad .z.h./e.d. ad d.z. cõiugatur .n./a.g. & producať & per .e.z. ad .a.b. ducãtur .e.t.s.c./z.l.m.n.x.o. ad .a.d. aũt .e.p.z.r. qñ igitur equidiſtãtes ſunt .z.x.e.s. & ductę in ipſas .e.z./x.s./t.m. eſt vt e.t. ad .t.s./z.m. ad .m.x. & inuicẽ vt .e.t. ad .z.m./t.s. ad .x.m. Igitur & vt quod fit ex .t.e. ad id quod fit ex .m.z. quod fit ex .t.s. ad id quod fit ex .x.m. Sed vt quod ex .e.t. ad id quod fit ex .m.z. trigonũ .e.t. ad .z.r.m. vt autem quod fit ex .t.s. ad id quod fit ex .x.m. trigonum .d.t.s. ad .x.m.d. Igitur & vt .e.t.p. ad .z.r.m./d.t.s. ad .x.m.d. equale autem e.t.p./a.s.c./t.d.s. & .r.m.z./a.x.n./d.m.x. vt igitur .d.t.s. ad .x.m.d./a.s.c. cum .t.d.s. ad .a.x.n. cum .x.m.d. Sed vt .a.s.c. ad .a.n.x. quod fit ex .c.a. ad id quod fit ex .a.n. idem quod fit ex .e.h. ad id qď fit ex .z.h. vt aũt .d.t.s. ad .x.d.m. qď fit ex .t.d. ad id qď fit ex d.m. idẽ quod fit ex .e.d. ad id quod fit ex .d.z. Igiť & vt .e.z. ad .h.z./e.d. ad .d.z.

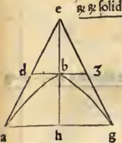


Propoſitio, Quadrageſima.

EIſdem exiſtentibus, Si per contactionem tangentium ducatur linea ad tactus coniungentem & a media coniungentem tactus ducta linea ſecat vtranq; ſectionum & coniungentem ad tactus, Erit vt tota ducta ad extra receptam inter equidiſtantem & ſectionem ſic factæ ſectiones lineæ ſub ſectionibus & tactus coniungente.

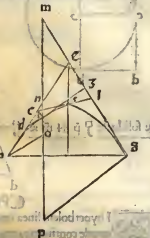
Sint contrapoſitæ.a.b.quarum centrum.g.tangentes autem.a.d.&.b.d. & coniungatur.a.b.&.g.d.e.igitur.a.e.eſt equalis.e.b.& ex.d.ad.a.b.ducatur.z.d.h.ab.e.vero vt contingit.t.e.&.e.l. Dico q; eſt vt.t.l.ad.l.c./t.e.ad.e.c.ducantur ex.t.&.c.ad.a.b.l.m.n.x./c.o.p.ad.a.d.vero.t.r./c.s.& ducatur.a.g.x.ꝛ.qm̄ igitur in equidiſtantes.x.m.&c.p.ductæ ſunt.x.a.y./m.a.p.eſt vt.x.a.ad.a.x.m.d.ad.a.p. Sed vt.x.a.ad.a.y./t.e.ad.e.c./vt autem.t.e.ad.e.c./t.n.ad.c.o.propter ſimilitudinem trigonium.t.e.n.&.c.e.o.vt igitur.t.n.ad.c.o./m.a.ad.a.p.igitur & vt quod fit ex.t.n.ad id quod fit ex.c.o.quod fit ex.m.a.ad id quod fit ex.a.p.Sed vt quod fit ex.t.n.ad id quod fit ex.o.c.trigonum.t.r.o.ad.c.s.o.vt autem quod fit ex.m.a.ad id quod fit ex.a.p.trigonum.x.m.a.ad.a.y.p.igitur & vt.t.n.r.ad.c.o.s./m.x.a./a.y.p.equale autem.t.n.r./x.a.m.&m.n.d.&.s,o.c./a.y.p./d.o.p. Igitur & vt.x.m.a.cum trigono.n.m.d.ad trigonum.a.y.p.cum trigono.p.d.o.ſic.x.m.a.trigonum ad trigonum.p.y.a.& reliquum igitur n.m.d.ad reliquum trigonum.d.o.p.eſt vt totum ad totum, Sed vt.x.m.a trigonum ad.a.y.trigonum quod fit ex.x.a.ad id quod fit ex.a.y.vt autem.m.d.n.ad.p.d.o.quod fit ex.m.n.ad id quod fit ex.p.o.Igitur & vt quod fit ex.m.n.ad id quod fit ex p.o.quod fit ex.x.a.ad id quod fit ex.a.y.vt autem quod fit ex.m.n.ad id quod fit ex.p.o.quod fit ex.y.d.ad id quod fit ex.o.d.vt autem quod fit ex.x.a.ad idquod fit ex.a.y.quod fit ex.t.e.ad id quod fit ex.e.c.vt autem quod fit ex.n.d.ad id quod fit ex.d.o.quod fit ex.t.l.ad id quod fit ex.l.c.Igitur & vt quod fit ex.t.e.ad id quod fit ex.e.c.quod fit ex.t.l.ad id quod fit ex.l.c.eſt igitur vt.t.e.ad.e.c./t.l.ad.l.c.

applicata.a.o.equalis eſt.n.b./b.o.&.y.d./d.a. eſt autem &.e.c./c.a. Igitur vt.a.e.ad.a.c./n.a.ad.a.d.viciſſim vt.e.a.ad.a.n,/e.a.ad.a.d. Sed vt.e.a.ad.a.n./h.a.ad.a.x. Igitur & vt.e.a.ad.a.d./h.a.ad.a.x.eſt autem & vt.g.a.ad.a.h./e.a.ad.a.c.dupla igitur vtraq; vtriuſq; per equum igitur vt.g.a.ad.a.x./e.a.ad.a.d. diuidenti vt.g.x.ad.x.a./e.d.ad d.a.demonſtratum autem eſt vt.g.x.ad.x.a./g.z.ad.z.e. Igitur vt.g.z.ad.z.e./e.d.ad.a.d.rurſus quoniam eſt vt.g.x.ad.x.a./g.p.ad.a.o.& eſt.g.p.quidē dupla.b.z. quoniam &.g.m./m.z.&.a.o./b.d. quoniam & .a.n./n.d. Igitur vt.g.x.ad.x.a./z.b.ad.b.d.&.g.z.ad.z.e.&.e.d.ad.d.a.



℞ ℞ ſolida 15863 p̃ ℞ congruente 49

℞ Cuba 1600 p̃ ℞ 4096

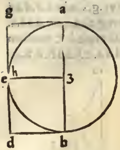


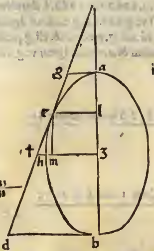
℃Propoſitio, Quadrageſima ſecunda.

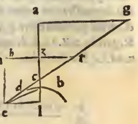
SI hyperbole vel defectioni vel circuli circunferentiæ vel contrapoſitis a ſummitate diametri ducantur ordinate applicatæ alia autem quædam vt contingit ducatur, tangens ſecabit ab ipſis lineas equale continentes quartæ parti ſpeciei ad eandem diametrum.

℃Sit.n.quædam predictarum ſectionum, cuius diameter .a.b.&.ab.a.&.b. ducantur ordinate applicatæ .a.g.&.d.b.alia autem ſilicet.g.e.d. tangat ad.e. Dico q; id quod eſt ſub.a.g.&.b.d.equale eſt quartæ parti ſpeciei ad.a.b.Sit.n.cētrum.z.& per ipſum ducatur ad .a.g. &.b.g./z.h.t. qñ igitur /a.g.&.b.d.equidiſtantes, eſt autem &.z.h. equidiſtans coniuncta igitur diameter eſt linea.b. quare quod fit ex.z.h.equale eſt quartæ parti ſpeciei ad.a.b. S quidem igitur.z.h.in defectione & circulo per.e.venit equales fiunt.a.g./z.h./b.d.& manifeſtum inde q; id quod eſt ſub.a.g.&.b.d.equale eſt ei quod fit ex.z.h. Idem quartæ parti ſpeciei ad.a.b.non veniat vtiq; & coincidant.d.b.&.b.a.productæ ad.c.& per.e.ad.a.g. ducatur .e.l.ad.a.b. autem/c.m./qñ igitur equale eſt quod eſt ſub.c.z.l.ei quod fit ex.a.z.eſt vt.c.z.ad.z.a./z.a.ad.z.l.& c.a.ad.a.l.eſt autem vt.c.z.ad.z.a.idem ad.z.b.econuerſo vt.b.z.ad.z.c./l.a.ad.a.c. componenti vel diuidenti vt.b.c.ad.c.z./l.c.ad.c.a. Igitur & vt.d.b.ad.z.t./e.l.ad.g.a.quod igitur eſt ſub.d.b.&.g.a.equale eſt ei quod eſt ſub.z.t./e.l.idem ei quod eſt

ſub.t.z.m.quod autem eſt ſub.t.z.m.equale eſt ei quod fit ex.z.h.idem quartę parti ſpeciei ad.a.b.Igitur & qđ eſt ſub.d.b.&.g.a.eq̄le eſt quartę parti ſpeciei ad.a.b.







℞ ſolida de 9 p̄ 64 m̄ ℞ 41/11

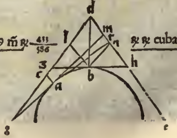
℞ ℞ cōgruēte 46 1/7 p̄ 48

¶Propoſitio,Quadrageſimatertia.

SI hyperbolem linea tangat ſecabit a non tangentibus ad centrum ſectionis lineas equale continentes contento ſub ſecatis lineis ſub tangente ad ſumitatem ſectionis quæ ad axem.

¶Sit hyperbole.a.b.non tangētes aūt.g.d.e.axis aūt.b.d. & ducatur per.b.tangens.b.z.h.alia aūt quędā vt cōtingit tangēs ſilicet.g.a.t. Dico q̃ id qđ eſt ſub.z.d.h.eq̄le eſt ei quod eſt ſub.g.d.t.ducātur.n.ab.a.&.b.ad.d.h./a.c.&.b.l.ad.g.d.vero.a.m.&.b.n.q̄ñ igitur tāgit.g.a.t.eſt.g.a.equalis.a.t.quare.g.t.dupla.t.a.&.g.d./a.m.&.d e./a.c.quod igiť eſt ſub.g.d.t.quadruplum eſt eius quod eſt ſub.c.a.m.ſimiliter vtiq; demonſtrabitur quod eſt ſub.z.d.h.quadruplū eius quod eſt ſub.l.b.n.equale aūt eſt quod eſt ſub.c.a.m.ei quod eſt ſub.l.b.n.eq̄le igitur & quod eſt ſub.g.d.t.ei quod eſt ſub.z.d.h.ſimiliter vtiq; demonſtrabitur & ſi.d.b.altera quędam ſit diameter,& non axis.

℞ ℞ ſolida ſupfitial 489 m̄ ℞ 411/556



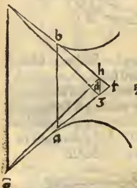
℞ ℞ cuba de 9 p̄ ℞ ſuperfitial 436

¶Propoſitio, Quadrageſimaquarta.

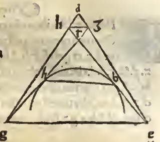
SI hyperbolem vel contrapoſitas duo lineę tangentes coincidant non tangētibus, ductæ ad contactiones equidiſtantes erunt coniungenti tactus.

¶Sit.n.hyperbole vel cōtrapoſitę.a.b.nō tāgētes vero.d.e.g.& tāgētes.a.g.t.z.&.e.b.t.h.& cōiungātur.a.b./z.h.&.g.e, Dico ꝙ eqdiſtātes sūt,qñ.n.quod ē ſub.g.d.z.eq̄le eſt ei quod ē ſub.h.d.e,eſt vt.g.d.ad.d.e./h.d.ad.d.z.eqdiſtās igiť eſt.g.e./z.h.& propter hoc vt.t.z.ad.z.g./t.h.ad.h.e.vt āt.h.e.ad.h.b./g.z.ad.a.z.dupla.n.vtraq; per equum igitur vt.t.h.ad.h.b./t.z.ad.z.a.Igitur.z.h.equidiſtans eſt.a.b.

℞ ℞ ſolida ſuperfitial 14689 p̄ ℞ ligata 184913 p̄ ℞ 48



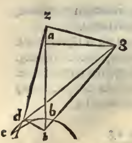
℞ ſuperfitial ſolida & nō cuba 15816 p̄ ℞ $\frac{345}{831}$

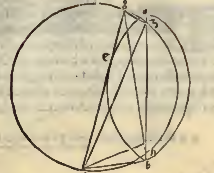


¶Propoſitio, Quadrageſimaquinta.

SI in hyperbole vel defectione vel circuli circunferentia vel contrapoſitis a ſummitate axis ducantur lineæ contrapoſitæ ad rectos & quartæ parti ſpeciei equale ad axim producatur in vtranq; in hyperbole quidem & contrapoſitis excedens ſpecie tetragono in defectione deficiens ducatur autem quędam linea tangens ſectionem coincidens lineis ad rectos, ductæ a contactione lineæ ad facta puncta ex parabole rectos angulos faciunt ad dicta puncta.

¶Sit vna dictarū ſectionū cuius axis.a.b. ad rectos āt.a.g.&.b.d.tangens vero.g.e.d.& quartę parti ſpeciei equale ꝓducať in vtrāq; vt dictū eſt quod eſt ſub.a.z.b.& quod eſt ſub.a.h.b.& cōiungātur.g.z./g.h./d.z./d.h. Dico ꝙ & qui eſt ſub.g.z.d.& qui eſt ſub.g.h.d.āgulus rectus eſt,qñ.n.quod eſt ſub.a.g.b.d.eq̄le demōſtratū eſt quartę parti ſpeciei ad.a.b.eſt aūt & quod eſt ſub.a.b.z.eq̄le quartę parti ſpeciei qď igiť eſt ſub.a.g.d.b.equale eſt ei quod eſt ſub.a.z.b.eſt igiť vt.g.a.ad.a.z./z.b.ad.b.d.& recti āguli qui ſunt ad pūcta.a.&.b.eq̄lis igitur qui eſt ſub.a.g.z.ei qui eſt ſub.b.z.d.& quę eſt ſub.a.z.g.ei qui eſt ſub.z.d.b.& qm̄ qui eſt ſub.g.a.z.rectus eſt qui igitur ſunt ſub.a.g.z.&.a.z.g.vni recto equales ſunt demōſtratus aūt & qui eſt ſub.a.g.z.equalis ei qui eſt ſub.d.z.b.qui igiť ſunt ſub.g.z.a.&.d.z.b.vni recto ſunt equales reliquus igiť qui eſt ſub.d.z.g.rectus eſt ſimiliter vtiq; demōſtrabiť & qui eſt ſub.g.h.d.rectus.

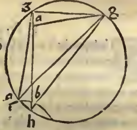




ℭPropoſitio,Quadrageſimaſexta.

EIſdem exiſtētibus cōiunctę eq̄les faciūt angulos ad tangētes,Eiſdem.n. ſubiectis dico q̄ equalis eſt angulus qui eſt ſub.a.g.z.ei qui eſt ſub.d.g.b.& q̄ eſt ſub g.d.z.ei q̄ eſt ſub.b.d.h.qm̄.n.demōſtratus eſt rectus vterq̄ eoꝝ qui ſunt ſub.g.z.d.&.g.h.d.circulus deſcriptus circa diametrū.g.d.veniet p̄ puncta.z.h.Igit̄ qui eſt ſub.d.g.h.equalis eſt ei qui eſt ſub.d.z.h.in eadē.n.circuli ſectiōe ſunt qui vero eſt ſub d.z.h.demōſtratus eſt equalis ei qui eſt ſub.a.g.z.quare qui eſt ſub.d.g.h.equalis eſt ei qui eſt ſub.a.g.z.ſimiliter autem & qui eſt ſub.g.d.z.ei qui eſt ſub.b.d.h.

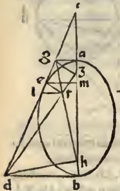
℞ ℞ ſolida ſupfic'al nō quadrata 282941 p̄ ℞ 12500



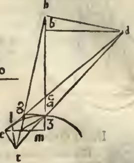
ℭPropoſitio,Quadrageſimaſeptima.

EIſdē exiſtētibus ducta a cōtactione cōiūctarū ad tactū ad rectos erit tangenti: ſupponant̄.n.eadē quę prius & coincidāt īuicē.g.h.quidē &.z.d.ad.t./g.d.vero &.b.a.p̄ductę ad.e.& cōiūgatur.e.t.dico q̄ cathetus eſt.e.t.ad.g.d.ſi.n.nō ducatur ex.t.ad.g.d.cathetus.t.l.qm̄ igitur equalis eſt qui eſt ſub.g.d.z.ei qui eſt ſub.h.d.b.eſt autem & rectus qui eſt ſub.d.b.h.recto qui eſt ſub.d.l.t.eq̄lis ſimile igit̄ d.h.b.trigonū.l.t.d.vt igit̄.h.d.ad.d.t./b.d.ad.d.l.Sed vt.h.d.ad.d.t./z.g.ad.g.t.p̄pterea q̄ ſunt recti qui ſunt ad.z.h.& qui ſunt ad.t.equales vt autem.g.z.ad.g.t./a.g.ad.g.l.propter ſimilitudinē trigonū.a.z.g.&.l.g.t.Igitur & vt.b.d.ad.d.l./a.g.ad.g.l.Inuicē vt.d.b.ad.g.a./d.l.ad.l.g.Sed vt.d.b.ad.g.b./b.e.ad.e.a.Igitur & vt.d.l.ad.g.l./b.e.ad.e.a.ducatur ab.e.ad.a.g./e.m.ordinate igitur applicata eſt ad.a.b.& erit vt

b.c.ad.c.a./b.m.ad.m.a. vt ãt.b.m.ad.m.a./d.e.ad.e.g.Igiẛ & vt.h.d.c.ad.l.g./d.e.ad e.g.quod eſt abſurdum non Igitur.t.l.cathetus eſt,neq; alia quedam preter.t.e.



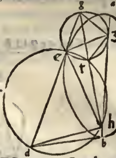
℞ ſupficial ſolida quadrata 1600



℄Propoſitio,Quadrageſimaoctaua.

EIſdem exiſtentibus demõſtrandũ q; a tacta ad facta puncta ex parabole equales faciunt angulos ad tãgẽtem,ſupponãtur eadẽ & cõiungãtur.e.z.& .e.h.Dico q; eq̃lis eſt ãgulus qui eſt ſub.g.e.z.ei q eſt ſub.h.c.d.qñ.n.recti ſunt ãguli qui ſunt ſub.d.h.t.&.d.e.t.deſcriptus circulus circa diametrũ.d.t.ueniet p pũcta.e.&.h.quare equalis erit q eſt ſub.d.t.h.ei qui eſt ſub.d.e.h.in eadẽ.n.ſectiõe,ſimiliter vtiq; & q eſt ſub.g.e.z.ei qui eſt ſub.g.t.z.eſt equalis & qui eſt ſub.g.t.z.ei qui eſt ſub.d.t.h.equalis,ad ſumitatem.n.Igitur & qui eſt ſub.g.e.z.ei qui eſt ſub.d.e.h.eſt equalis.

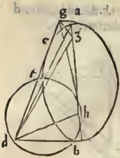
℞ ℞ ſolida nõ q̃drata 4887



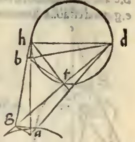
℞ ℞ Cubica quadrata 64 p̃ ℞ 13

℄Propoſitio,Quadrageſimanona.

EIſdẽ ſubiectis ſi ab aliquo pũctorũ cathetus ducaẛ ad tãgẽtẽ, ductę a facto puncto ad extrema axis rectũ faciũt ãgulũ,ſupponaẛ.n.eadẽ & ab.h.ad.g.d. cathetus ducaẛ.h.t. & coniungatur.a.t.&.b.t.dico q; ãgulus q eſt ſub.a.b.t.rectus eſt qñ.n.rectus qui eſt ſub.d.b.h.& qui eſt ſub.d.t.h.circulus circa diametrũ deſcriptus veniet p.t.&.b.& eq̃lis erit ãgulus qui eſt ſub.h.t.b.ei q eſt ſub.b.d.h.qui vero eſt ſub a.h.g.ei qui eſt ſub.b.d.h.demõſtratus eſt equalis Igiẛ & qui eſt ſub.b.t.h.ei qui eſt ſub.a.h.g.idẽ ei qui eſt ſub.a.t.g.eſt equalis quare & qui eſt ſub.g.t.h.ei qui eſt ſub.a.t.b.rectus autem qui eſt ſub.g.t.h.rectus igitur & qui eſt ſub.a.t.b.



℞ ℞ ſolida ſupfitial 80896 p̃ 4

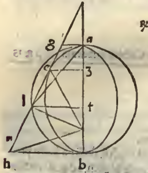


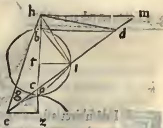
Propoſitio, Quinquageſima.

E Iſdem exiſtentibus, Si a centro ſectionis coincidat quedam tangenti equidiſtás ductę lineę p tactū & vnum punctorū equalis erit dimidio axis.

Sit.n.eadē que prius & cētrum.t.& cōiungať.e.z.&.d.b.&.b.a.coincidāt ad.c.& p.t.ad.e.z.ducatur.t.l.Dico q.t.l.eq̄lis eſt.t.b.cōiungátur.n./e.h./a.l./l.h./&.l.b.&.per.h.ducatur.ad.e.z./h.m.qm̄ igiť quod eſt ſub.a.z.b.equale eſt ei qui eſt ſub.a.h.b.eq̄lis igitur.a.z./h.b.eſt aūt &.a.t.equalis.t.b. Igiť &.z.t.equalis.t.h.quare &.e.l.equalis l.m, & qm̄ demōſtratus eſt āgulus qui eſt ſub.g.e.z.eq̄lis ei qui eſt ſub.d.e.h.qui vero eſt ſub.g.e.z.eq̄lis eſt ei qui eſt ſub.e.m.h.equalis igiť & qui eſt ſub.e.m.h.ei qui eſt ſub.m.e.h.Igitur &.e.h.eq̄lis.h.m.Sed &.e.l.demōſtratus eſt eq̄lis.l.m.cathetus igitur.h.l.ad.e.m.quare p prius demōſtratū rectus eſt q̄ eſt ſub.a.l.b.& deſcriptus circulus circa diametrum.a.b.veniet per.l.&.t.a.equalis eſt.t.b.Igitur &.t.l.ex.centro exiſtens ſemicirculi, equalis eſt.t.b.

℞ ℞ ſolida ſuperfitial 40843 p̃ ℈ m̃ ℞ 8863 m̃ ℞ $\frac{48}{63}$





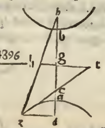
Propoſitio, Quinquageſimaprima.

S I hyperboles vel contrapoſitarū ad axim equale in vtraq; producať quartę parti ſpeciei excedēs ſpecie tetragono & a factis pūctis ex parabole lineę ad vtrauis ſectionum maior minorem excedit axim.

Sit.n.hyperbole vel cōtrapoſitę quatū axis.a.b.centrū autē.g.& quartę parti ſpeciei equale ſit vtrūq; eorū que ſunt ſub.a.d.b.&.a.e.b.& a pūctis.e.&.d. ad lineam

e.z.&.d.z. Dico q̃.e.z./excedit.z.d./a.b. ducať per.z.tangẽs.z.t.c. per.g. aũt ad.z.d./h.g.t. equalis igitur eſt qui eſt ſub.c.t.h.ei qui eſt ſub.c.z.d.inuicẽ n. & qui eſt ſub c.z.d.equalis eſt ei qui eſt ſub.h.z.t.igiť & qui eſt ſub.h.z.t.equalis eſt ei qui eſt ſub.h.t.z.igitur.h.z.equalis.h.t. &.z.h. equalis.h.e.qm̃ &.a.e./b.d.&.a.g./g.b.&.e.g./g.d.&.h.t.eq̃lis eſt.e.h.quare.z.e.dupla eſt.h.t.& qm̃.g.t.equalis demõſtrata eſt.g.b.Igitur.e.z.dupla eſt vtriuſq;.h.g.&.g.b.Sed dupla quidem.h.g.eſt.z.d.&.g.b.dupla eſt a.b.Igitur.e.z.equalis eſt vtriq;.z.d.&.a.b.quare.e.z.excedit.z.d./a.b.

℞ ſolida ſupfitial nõ quadrata 4396



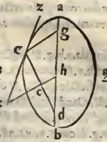
℞ ℞ ſolida et ſupfitial q̃drata 225

℃Propoſitio,Quinquageſimaſecunda.

SI in defectione ad maiorem axium quartæ parti ſpeciei equale in vtranq; producatur deficiens ſpecie tetragono, & a factis ex parabole punctis lineę ad lineam, equales erunt axim.

℃Sit defectio cuius maior axium.a.b.& quartę parti ſpeciei vtrũq; eq̃le ſit eorũ que ſũt ſub.a.b.g.&.a.d.b.& ex.g.&.d. ad lineã.g.e.d.Dico q̃.g.e.d.eq̃les ſũt.a.b.ducať.e.z.t.tãgẽs & cẽtrũ.h.& p ipſum ad.g.e.h.t.c.qm̃ igiť equalis ẽ q eſt ſub.g.e.z.ei q ẽ ſub.t.e.c.q vero ẽ ſub.z.e.g.ei q ẽ ſub.e.t.c.eq̃lis igiť & q eſt ſub.e.t.c.ei q eſt ſub.t.e.c.eſt eq̃lis.Igiť &.t.c.ẽ eq̃lis.c.e.& qm̃.a.h.equalis eſt.h.b.&.a.g./d.b.Igiť & g.h.eq̃lis.h.d.q̃re &.e.c./c.d.& ppter hoc.e.d.q̃dẽ dupla ẽ.t.c.&.e.g./c.b.& vtraq;.g.e.d.dupla eſt.h.t.Sed &.a.b.dupla eſt.h.t.Igiť.a.b.equalis eſt lineis.g.e.d.

℞ ℞ ſuperficial non ſolida 483



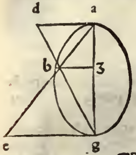
℞ ℞ ſolida 4339 p̃ ℞ de 9 m̃ 14

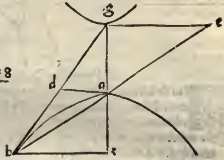
℃Propoſitio,Quinquageſimatertia.

SI i hypbole vel defecttiõe vel circuli circũferẽtia vel cõtrapoſitis a ſumitate diametri ducãtur ordinate applicatę & ab eiſdẽ terminibus ad idẽ pũctũ lineę,ductę ſecẽt eq̃diſtãtes cõtẽtũ ſub ſecatis eq̃le ẽ ſpẽi quę ẽ ad eãdẽ diametrũ.

℃Sit vna dictarum ſectionũ.a.b.g.cuius diameter.a.g.& ordinate applicẽtur.a.d.&.g.e

& p ducãtur.a.b.e.&.g.b.d.dico q̧ id qđ ē ſub.a.d.&.e.g.eq̃le ē ſpēi q̄ eſt ad.a.g.ducanť.n.ex.b.ordinate applicata.b.z.ē igiť vt qđ ē ſub.a.z.g. ad id qđ fit ex.z.b. tranſuerſa ad rectã & ad ſpēm id tetragonũ qđ fit ex.a.g.rō igiť eius q ē ſub.a.z.g. ad id qđ fit ex.b.z.cõponiť ex rõne.a.z.ad.z.b.& rõne.g.z.ad.z.b.igiť rō ſpēi ad tetragonum qđ fit ex.a.g. cõponiť ex rõne.z.b.ad.z.a.&.b.z.ad.g.z. Sed vt.a.z.ad.z.b./a.g.ad.g.e.vt aũt.g.z.ad.z.b./g.a.ad.a.d.Igiť rō ſpēi ad tetragonũ qđ fit.ex.a.g.Componitur ex rõne.g.e.ad.g.a.& ex rõne.a.d.ad.g.a. Cõponiť aũt & rō eius qđ eſt ſub a.d.&.e.g.ad tetragonũ qđ fit ex.a.g.ex eiſdē vt igiť ſpēs ad tetragonũ qđ fit ex.a.g.ſic qđ eſt ſub.a.d.&.g.e.ad tetragonũ qđ fit ex.a.g.eq̃le igiť eſt qđ eſt ſub.a.d.& g.e.ſpeciei que eſt ad.a.g.





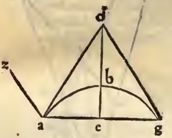
¶Propoſitio,Quinquageſimaquarta.

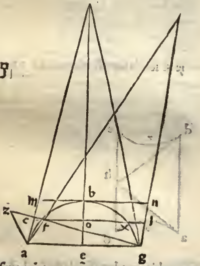
SI Coni ſectionē vel Circuli circũferentiã duo lineę tãgentes coincidãt p tactus vero equidiſtãtes ducãtur tangẽtibus & a tactibus ad idē pũctũ lineę. ducantur lineę ſecãtes equidiſtãtes contẽtũ rectãgulũ ſub ſecatis ad tetragonũ qđ fit ex cõiugẽte tactus rationē habet cõpoſitã ex ea quã habet ſectio q̄ intus eſt cõiugẽtis cõtactũ tangẽtiũ & ſectionē p mediũ cõiungẽtis tactus ad reliquum potẽtia & ex ea quam habet ſub tangẽtibus contentum orthogonium ad quartam partem □ ni quod fit ex cõiungẽte tactus ſit.

¶Sit Coni ſectio vel Circuli circũferẽtia.a.b.g. & tãgẽtes.a.d.&.g.d. & cõiũgať.a.g. & in duo ſeceť ad.e.& cõiũgatur.d.b.e.& ducatur ex.a./a.z.ad.g.d.ex.g. vero ad.a.d./g.h.& relictũ ſit quodã pũctũ in ſectiõe qđ ſit.t.& cõiũcta.a.t.&.g.t.pducatur ad h..&.z.dico q̧ id qđ eſt ſub.a.z.&.g.h.ad id qđ fit ex.a.g.Cõpoſitã habet rationē ex ea quã habet qđ fit ex.e.b.ad id qđ fit ex b.d.& qđ ē ſub.a.d.g.ad quartã partē eius qđ fit ex.a.g.idē quod eſt ſub.a.e.g.ducatur.n.ex.t.ad.a.g./t.c.l.x.o.ex.b.vero/b.m.n. manifeſtũ q̧.m.n.tãgit qñ Igitur.a.e. equalis eſt.e.g.& eſt.a.b. equalis.b.n.&.c.o./o.l.&.t.o./o.x.&.c.t./x.l.qñ igitur tangunt.m.b.&.m.a. & ad.m.b.ducta eſt.c.t.l. eſt vt qđ fit.ex.a.m.ad id qđ fit ex.m.b.idē qđ eſt ſub.m.b.n./qđ fit ex.a.t.ad id qđ eſt ſub.x.c.t.idē qđ eſt ſub.l.t.c.& inuicē vt qđ ſit ex.a.m.ad id qđ fit ex.a.c.quod ē ſub n.b.m.ad id quod eſt ſub.l.t.c. vt autem quod eſt ſub.n.g./m.a. id quod fit ex.m.a. quod eſt ſub.b.g.&.c.a.ad id quod fit ex.c.a.per equum igitur vt quod eſt ſub.n.g.&

m.a. ad id quod eſt ſub.n.b.m.quod eſt ſub.l.g.&.c.a.ad id quod eſt ſub.l.t.c.qđ autem eſt ſub.l.g.&.c.a.ad id quod eſt ſub.l.t.c.cõpoſitã habet rationem ex ratione.g.l. ad.l.t.idẽ.z.a.ad.a.g.& ratione.a.c.ad.c.t.idẽ.h.g.ad.g.a. quæ eadem eſt ei quã habet quod eſt ſub.h.g.&.z.a.ad id quod fit ex.g.a.vt igitur quod eſt ſub.n.g.&.m.a.ad id quod eſt ſub.n.b.m. quod eſt ſub.h.g. &.z.a.ad id quod fit ex.g.a. quod vero eſt ſub.g.n.&.m.a.ad id quod eſt ſub.n.b.m.accepto medio quod eſt ſub.n.d.m.Compoſitã habet rationem ex ea quã habet quod eſt ſub.g.n.&.a.m.ad id qđ eſt ſub.n.d.m. & quod eſt ſub.n.d.m.ad id quod eſt ſub.n.b.m.quod igitur eſt ſub.h.g.&.z.a. ad id quod fit ex.g.a.cõpoſitã habet rationẽ ex ratiõe eius qđ eſt ſub.g.n.&.a.m.ad id qđ eſt ſub.n.d.m.& ratione eius quod eſt ſub.n.d.m.ad id qđ eſt ſub.n.b.m.Sed vt quod eſt ſub.n.g.&.a.m.ad id quod eſt ſub.n.d.m.quod fit ex.e.b.ad id quod fit ex.b.d.vt autem quod eſt ſub.n.d.m.ad id quod eſt ſub.n.b.m.quod eſt ſub.g.d.a.ad id quod eſt ſub.g.e.a.quod igitur eſt ſub.c.g.&.a.z.ad id quod fit ex.a.g.cõpoſitã habet rationem ex ratiõe eius quod fit ex.b.e.ad id quod fit ex.b.d.& ratione eius qđ eſt ſub.g.d.a.ad id quod eſt ſub.g.e.a.

℞ ℞ ſupficial ſolida non quadrata 4:9 p̄ ℞ de



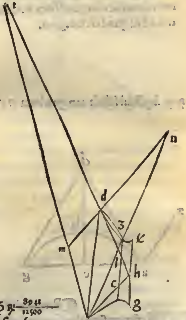


ℭPropoſitio, Quinquageſimaquinta.

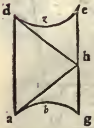
SI cõtrapoſitas duo lineę tangẽtes coicidãt & p cõtactionẽ ducať linea ad tactus cõiungentẽ a tactibus vero ducãtur eq̃diſtãtes tangẽtibus ꝓducãtur ãt a tactibus ad idẽ pũctũ alterius ſectiõis ſecãtes eq̃diſtãtes, cõtentũ ſub ſecatis ad tetragonũ quod fit ex cõiungẽte tactus rationẽ habebit eã quã cõtentũ ſub tangẽtibus ad id quod fit ex ducta per cõtactum ad cõiungẽtem tactus vſq; ad ſectionem.

ℭSint cõtrapoſitę.a.b.g.&.d.e.z.tangẽtes ãt ipſas.a.h.&.h.d.& cõiũgať.a.d.& ab.h. quidẽ ad.a.d.ducať.g.h.e.ab.a.vero ad.d.h./a.m.& ex.d.ad.a.h./d.m.relictũ autẽ ſit

quodã pũctũ.z.in ſectiõe & cõiũgant.a.n.z.&.z.d.t.Dico ꝙ ẽ vt qđ fit ex.g.h.ad id qđ eſt ſub.a.h.d.qđ fit ex.a.d.ad id qđ eſt ſub.a.t.&.n.d.ducaẽ.n.p.z.ad.a.d./z.l.c.b.qñ igiẽ demõſtratũ eſt ꝙ eſt vt qđ fit ex.e.h.ad id qđ fit ex.h.d.ſic qđ eſt ſub.b.l.z.ad id qđ fit ex.d.l.eſt autẽ.g.h.eq̃lis.e.h.&.b.c./z.l.vt igiẽ qđ fit ex.g.h.ad id qđ fit ex.h.d.qđ eſt ſub.c.z.l.ad id qđ fit ex l.d.eſt autẽ & vt qđ fit ex.d.h.ad id qđ eſt ſub.d.h.a.qđ fit ex.d.l.ad id qđ eſt ſub.d.l.&.a.c.ꝑ equũ igiẽ vt qđ fit ex.g.h.ad id qđ eſt ſub.d.h.a.qđ fit ex.d.h.a.ad id qđ eſt ſub.d.l.&.a.c.rõ autẽ eius qđ eſt ſub.c.z.l.ad id qđ eſt ſub.a.c.&.d.l.cõpoſita eſt ex ratione.z.c.ad.c.a.& ratione.z.l.ad.l.d.Sed vt.z.c.ad.c.a./a.d.ad.d.n.vt ãt.z.l.ad.l.d./a.d.ad.t.a.Igiẽ ratio eius qđ fit ex.g.h.ad id quod eſt ſub.d.h.a.cõponiẽ ex ratione.a.d.ad.d.n.& ratiõe.d.a.ad.a.t.Cõponitur ãt ratio eius quod fit ex.a.d.ad id quod ẽ ſub.a.t.&.n.d.ex eiſdẽ eſt igiẽ vt quod fit ex.g.h.ad id quod eſt ſub.a.h.d./quod fit ex.a.d.ad id quod eſt ſub.n.d.&.a.t.ecõuerſo vt quod ẽ ſub.a.h.d.ad id quod fit ex.g.h.quod ẽ ſub.n.d.a.t.ad id quod fit ex.a.d.



℞ ℞ ſolida ſuperfitial quadrata 729 p̄ ℞ $\frac{341}{896}$

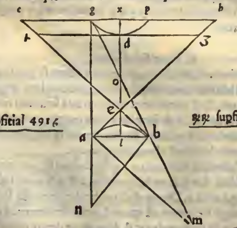


℞ ℞ cubica quadrata ſolida ſupꝑfitial nõ cuba 4993 p̄ ℞ $\frac{8941}{12500}$

ℂPropoſitio, Quinquageſimaſexta.

SI altera cõtrapoſitaꝝ duo lineę tãgẽtes coĩcidãt ꝑ tactus ãt eq̃diſtãtes ducanẽ tãgẽtibus & a tactibꝰ ad idẽ pũctũ alterius ſectiõis ducanẽ lineę ſecãtes eq̃diſtantes,cõtentũ orthogoniũ ſub ſecatis rationẽ habebit ad tetragonũ quod fit ex coniũgẽte tactus cõpoſitã ex ea quã hẽt cõiungẽs cõtactionẽ & ſectionẽ in duo q̃ eſt inter ſectionẽ ĩ duo & alterã ſectionẽ ad eã q̃ eſt ĩter eãdẽ ſectionẽ & cõtactionẽ potentia & ex ea quã hẽt cõtentũ ſub tãgẽtibꝰ ad q̃rtã ptẽ eius qđ fit ex cõiungẽte tactus.

❡ Sint cõtrapoſitę.a.b.&.g.d.quarꝫ cẽtrū.o.tãgẽtes vero.a.e.h.z.&.b.e.t.c.& cõiungatur.a.b.& i duo ſecet ad.l.& cõiuncta.l.e.ꝓducat ad.d.& ducat ab.a./a.m.ad.b.e.ex b.vero ad.a.e.b.n.relictū ãt ſit quodã pũctū in ſectiõe.g.d.qđ ſit.a.& ducãtur.g.b.m.&.g.a.n.Dico ꝙ id qđ eſt ſub.b.n.&.a.m.ad id quod fit ex.a.b.rationẽ hẽt cõpoſitã ex ratiõe eius qđ fit ex.l.d.ad id qđ fit ex.d.e.& ratiõe eius quod ẽ ſub.a.e.b.ad quartã partẽ eius qđ fit ex.a.b.idẽ quod ẽ ſub.a.b.ducat.n.ex.g.&.d.ad.a.b./g.h.c.&.d.t.z.manifeſtū vtiqꝫ ꝙ.a.l.eq̃lis eſt.l.b.eſt ãt &.t.d.eq̃lis.d.z.&.c.x./x.h.eſt &.x.g./x.p.quare &.g.c./h.p.& qm̃ cõtrapoſitę ſunt.a.b.&.d.g.tãgentes ãt.b.e.t.d.& ad.d.t./c.t.eſt igit quod fit ex.b.t.ad id quod fit ex.t.d.quod fit ex.b.c.ad id quod ẽ ſub.p.c.g.eq̃le ãt quod fit ex.t.d.ei quod ẽ ſub.t.d.z.& quod ẽ ſub.p.c.g.ei quod eſt ſub.c.g.h.eſt igit vt qđ fit ex.b.t.ad id quod ẽ ſub.t.l.z.qđ fit ex.b.c.ad id quod ẽ ſub.c.g.h.eſt ãt & vt qđ eſt ſub.z.a.&.t.b.ad id quod fit ex.t.b.quod ẽ ſub.h.a.&.c.b.ad id qđ fit ex c.b.ꝑ equū igit eſt vt quod ẽ ſub.a.z.&.t.b.ad id qđ eſt ſub.t.d.z.quod ẽ ſub.c.b.&.a.h.ad id qđ eſt ſub.c.g.h.ratio ãt eius quod ẽ ſub.a.z.&.t.b.ad id quod eſt ſub.t.d.z.accepto medio qđ eſt ſub.t.e.z.Cõponit ex ratiõe eius quod ẽ ſub.a.z./t.b.ad id quod eſt ſub.t.e.z.& ratiõe eius quod ẽ ſub.t.e.z.ad id qđ eſt ſub.t.z.d.& ẽ vt quod eſt ſub a.z.&.t.b.ad id quod ẽ ſub.t.e.z.quod fit ex.l.d.ad id quod fit ex.d.e.vt ãt quod eſt ſub.t.e.z.ad id quod ẽ ſub.t.d.z.quod eſt ſub.a.e.b.ad id quod ẽ ſub.a.l.b.ratio igitur eius quod ẽ ſub.a.h.b.c.ad id quod eſt ſub.c.g.h.cõponit ex ratiõe eius quod fit ex.l.d.ad id quod fit ex.d.e.& ratiõe eius quod eſt ſub.a.e.b.ad id quod eſt ſub.a.l.b.habet aũt quod eſt ſub.a.h.c.b.ad id qđ eſt ſub.c.g.h.Cõpoſitã rationẽ ex ratiõe.b.c.ad.c.g.& ratiõe.a.h.ad.h.g.ſed vt.c.b.ad.c.g./m.a.ad.a.b.vt ãt.a.h.ad.c.g./b.n.ad.b.a.Igit Cõpoſita ratio ex.m.a.ad.a.b.& ratiõe.n.b.ad.b.a.quę eadẽ eſt ei quam habet qđ eſt ſub.a.m.&.b.n.ad id qđ fit ex.a.b.Cõponit ex ratiõe eius qđ fit ex.l.d.ad id quod fit ex.d.e.& ratione eius quod eſt ſub.a.e.b.ad id quod eſt ſub.a.l.b.



℞℞ ſolida & ſupfitial 4916

℞℞ ſupfitial nõ quadrata 4096

❡ Explicit Liber Tertius.

PROPOSITIO PRIMA.

INCIPIT LIBER QVARTVS APOLLONII PERGEI CONICORVM

Rogatione Euthochii Aſcalonitæ.

PRius quidem miſi ſcribens ad Eudemum Pergamenum compoſitorũ a nobis Conicorum in octo libris prima tria, cum vero perfecerimus illius reliqua volentes ad te ſcribere propterea quod cupis ꝑticipare ex factis a nobis miſimus in preſenti tibi quartum continet autem hoc ad quot puncta plurima poſſit conorum ſectiones inuicemqꝫ & circuli circunferentię coincidetẽ. Si totę totis congruant: Et inſuper coni ſectio & circuli circunferentia contrapoſitis ad quot puncta plurima coincidant & extra hoc, Sed non pauca his ſimilia, hæc aũt prędicta Conon Samius miſit ad traſydeum non recte in demonſtrationibus conuertens quare & mediocriter ipſum tetigit Nicoteles Cyrenęus. De ſecundo autem mentionem ſolum fecit Nicoteles cum contradictione ad Cononẽ vt potentis demonſtrare, demonſtrato autem hoc neqꝫ ab hoc neqꝫ neqꝫ ab alio quodam fecimus, Tertium quidem & alia eiuſdem generis his ſimpliciter a nullo reprehenſa inueni, omnia autem lecta quęcunqꝫ non feci, multa & varia erubuit ſuſcipiens theoremata quorum tamen plurima ſum in primis tribus libris aſſecutus reliqua vero in hoc. Hęc autem ſpeculata vſum ſufficientẽ prebent ad cõpoſitiones problematũ & diffinitiones, Nicoteles quidẽ cauſa differẽtię ad Cononẽ, nullum ex inuẽtis a Conone in diffinitiões dicit venire vſum nõ vera dicẽs. Eteni ſi omnino, abſqꝫ his poteſt ſecundum diffinitiones reddi, Sed & per ipſam eſt intelligere prõptius ſingula, vt ꝗ multipliciter vel quotupliciter fiat & rurſus ꝗ non fiat, talis autẽ precognitio ſufficientem occaſionem adiuuat ad queſitus, & ad reſolutiones diffinitionum ſunt vtilia theoremata hęc, abſqꝫ autẽ hac vtilitate & per ipſas demõſtrationes digna erunt quę videantur etenim alia multa eorum quę ſunt in mathematicis propter hoc & non propter aliud ſuſcipiemus.

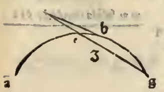
Propoſitio, Prima.

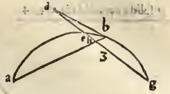
SI in Coni ſectione vel circuli circunferentia relictum ſit quodam punctum extra, & ab ipſo ſectioni coincidant duo linee, quarum altera tangit, altera vero ſecat ad duo puncta & quam habet rationem tota ſecans ad extra receptã inter punctum & lineam, hanc ſecat linea intra recepta, quare eiuſdem rationis lineę ad idem punctum ſunt: A tactu ad diuiſionem ducta linea coincidit lineę, & a contactione ad extra punctum ducta linea tangit lineam.

Sit.n.Coni ſectio vel circuli circunferetia.a.b.g.& relictum ſit punctum extra.d.& ab eodem.d.b.tangit ad.b.&.d.e.g. ſecat ſectionem ad.a.&.g.& quam habet ratiõem.g.d.ad.d.e.hanc habet.g.z.ad.z.e. Dico ꝗ ducta ex.b.ad.z. coincidit ſectioni & ducta a contactione ad.d.tangit ſectionem, qñ igitur.d.g.ſecat ſectionem ad duo pũcta non erit diameter ipſius, poteſt igitur quis per.d. diametrum ducere quare & tangentem,

ducatur

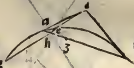
ducatur.n.ex.d.tangens ſectionem.d.a.& coniuncta.b.a.ſecet.e.g.ſi poſſibile eſt non ad.z.ſed ad.h.qñ igitur tangunt.b.d.&.d.a.& ad tactus eſt.b.a.& ducta eſt.g.d.ſecans ſectionem ad.g.&.e.&.a.b.ad.h.erit vt.g.d.ad.d.e./g.h.ad.h.e.quod eſt abſurdum, ſupponitur.n.vt g.d.ad.d.e./g.z.ad.z.e.non igitur.b.a.ad aliud punctum ſecat.g.e.





Propoſitio, Secunda.

HAe communiter in omnibus ſectionibus demonſtratum eſt in ſola autem hyperbole, Siquidem.d.b.tangit.d.g.autem ſecat ad duo puncta.e.&.g.&.e.g.continent ad.b.tactum & punctum.d.ſit ſub non tangentibus intra contentum angulum.ſimiliter demonſtratio fiet poſſibile.n.eſt a puncto.d.aliam tangentem ducere lineam g.a.& reliqua demonſtrationis ſimiliter facere, Eiſdem exiſtentibus.e.g.puncta non contineant tactum ad.b.intra ipſa, punctum autem.d.ſit ſub non tangentibus intra contentum angulum, poſſibile igitur ex.d.aliam tangentem ducere ſilicet.d.a.& reliqua ſimiliter demonſtrare.



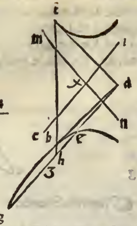
Propoſitio, Tertia.

EIſdem exiſtentibus, Si.e.g.contactiones tactum ad.b.contineant punctum vero.d.ſit in deinceps angulo ſub non tangentibus, ducta linea a tactu ad diuiſionem coincidet contrapoſitæ ſectioni & a contactione ducta linea tangent contrapoſitam.

Sint contrapoſitæ.b.t.& non tangentes.c.l.&.m.x.n.& punctum.d.in angulo qui eſt ſub.l.x.n.& ab ipſo tangant.d.b.ſecet autem.d.g.&.e.g.contactiones contineant.b.tactum & quam habet rationem.g.d.ad.d.e.habeat.g.z.ad.z.e.demonſtrandum q coniuncta ex.b.ad.z.coincidet ſectioni.t.& a contactione ad.d.tanget ſectionem, ducatur.n.ex.d.tangens ſectionem.d.t.& coniuncta.t.b.cadat ſi poſſibile non per.z.ſed per.h.eſt igitur vt.g.d.ad.d.e./g.h.ad.h.e.quod eſt abſurdum, ſupponitur.n.vt.g.d.ad.d.e./g.z.ad.z.e.

℞ ℞ ſolida pyramidalis 284624

℞ ℞ ſolida circularis 512

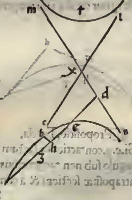


¶Propoſitio, Quarta.

EIſdem exiſtentibus, Si punctum.d.in quodam ſit non tangentium ducta ex.b. ad.z.equidiſtans erit eidem non tangenti. Supponautur.n.eadem & punctum d.ſit in vna non tangentium ſilicet.m.n.demonſtrandum q̃ ducta ex.b.equidiſtans.m.n.cadit ad.z.non.n. Sed ſi poſſibile ſit.b.h. erit vt.g.d.ad.d.e./g.h.ad.h.e.quod eſt impoſſibile.

℞ ℞ ſolida ſpherica & circularis 252849 p̄ ℞ de ʒ m̄ ℞ 43/255

℞ ſolida triangularis & pyramidalis 548612



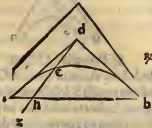
¶Propoſitio, Quinta.

SI relictum ſit extra hyperbolem punctum & ab ipſo ad ſectionem ducantur duo lineæ, quarum altera quidem tangit, altera vero equidiſtans vni non tangẽtium & receptæ ab equidiſtanti inter ſectionem & punctum, equalis in linea intra ſectionem ponatur, & a tactu ad factum punctum coniuncta linea coincidet ſectioni & ducta a contactione ad punctum extra tanget ſectionem.

¶Sit hyperbole.a.e.b. & relictum ſit quodam punctum.d.extra, & ſit prius.d.intra

contentum angulum ſub non tangentibus, & ab ipſo, b.d. quidem tangat, d.e.z. vero equidiſtans ſit alteri non tangentium, ponatur.e.z.equalis.d.e. Dico q̄ coniuncta linea ex.b. ad.z. coincidet ſectioni & ducta ex contactione ad.d. tanget ſectionem, ducatur.n./d.a. tangens ſectionem & coniuncta.b.a. ſecet.d.e. ſi poſſibile non ad.z. Sed ad aliud quid idem.h. Erit.d.e. equalis.e.h. quod eſt abſurdum, ſupponitur.n./d.e. equalis.e.z.

℞ ſolida ſupfitialis 625 p̄ 48

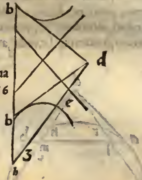


℞ ſolida pyramidalis quadrata 1024 p̄ ℞ 729

Propoſitio, Sexta.

Iſdem exiſtentibus punctum.d. ſit in angulo deinceps contentæ ſub non tangentibus. Dico q̄ & ſic eadem contingent, ducatur.n. tangens.d.r. & coniuncta.r.b. cadat ſi poſſibile non per.z. ſed per.h. igitur.d.e. equalis eſt.e.h. quod eſt abſurdum, ſupponitur.n./d.e. equalis.e.z.

℞ ℞ ſolida ſupfitialis nō quadrata 643 p̄ ℞ cuba 4096

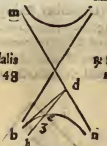


℞ ℞ ſolida ſupfitialis cubica q̄drata 15916 p̄ ℞ de 9

Propoſitio, Septima.

Iſdem exiſtentibus, Sit punctum.d. in vna non tangentium, & reliqua fiant eadem. Dico q̄ ducta a tactu ad relictam equidiſtans erit non tangentibus in qua erit punctum.d. Sint.n. dicta & ponatur.e.z. equalis.d.e. & ex.b. ducatur ſi poſſibile.b.h. equidiſtans.m.n. Igitur.d.e. equalis.e.h. quod eſt abſurdum, ſupponitur.n./d.e. equalis.e.z.

℞ ℞ ſolida circularis & pyramidalis rotunda 44581 p̄ ℞ de ℥ ℥ m̄ 48



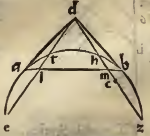
℞ ſolida quadrata ſupſitialis 13899 p̄ ℞ cuba 512

¶Propoſitio, Octaua.

SI ab eodem puncto, b. lineę ducantur ſecantes Coni ſectionem vel circuli circunferentiam vtraq; ad duo puncta & ſe habeant totæ ad extra receptas, ſic intra receptæ diuidant, quare ſimilis rationis lineas ad idem punctum eſſe, Ducta per diuiſiones linea coincidet ſectioni ad duo puncta & ductæ ex contactionibus ad punctum extra tangent lineam.

¶Sit. n. prędictarum linearum quędam, a, b. & a quodam puncto. d. ducantur. d. e. &. z. d. ſecantes lineam altera quidem ad. t. &. e. altera vero ad. z. &. h. & quam habet rationem. d. e. ad. t. d. hanc habeat. e. l. ad. l. t. quam vero. d. z. ad. d. h. /z. e. ad. e. h. Dico q̧ coniuncta ex. l. ad. c. coincidet ad vtranq; ſectionem & coniunctę a contactionibus ad. d. tangent ſectionem, qm̄. n. /e. d. &. z. d. vtraq; ad duo puncta tangit ſectionem, poſſibile eſt ex. d. diameter ducere ſectionis, quare & tangentes, in vtranq; ducantur tangentes b. d. &. d. a, & coniuncta. b. a. Si poſſibile non veniat per. l. &. c. Sed vel per alterum illorum vel per alterum, veniat prius per ſolum. l. & ſecet. z. h. ad. m. eſt igitur vt. z. d. ad. d. h. /z. m. ad. m. h. quod eſt abſurdum. Supponitur. n. vt. z. d. ad. d. h. /z. c. ad. c. h. Si vero. b. a. neq; per alterum punctorum. l. c. vadat, ad vtraſq;. d. e. &. d. z. continget quod eſt abſurdum.

℞ ℞ ſolida triãgular 6096



℞ ℞ ſolida & circular 4096

¶Propoſitio, Nona.

HAec quidem cõmuniter, in ſola autem hyperbole ſiquidem alia eadem ſint, contactiones vero vnius lineę contineant contactiones alterius & punctum. d. ſit intra angulum contentum ſub non tangentibus eadem contingent prędictis vt dictũ eſt in ſecunda propoſitione.

¶ Propoſitio, Decima.

EIſdem exiſtentibus, Si vnius contactiones non contineant contactiones alterius, punctum. d. eſt intra contẽtum angulũ ſub non tangẽtibus & deſcriptio & demõſtratio eadem ſecundæ.

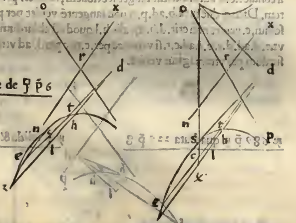
¶ Propoſitio, Vndecima.

EIſdem exiſtentibus, Si contineant vnius lineæ contactiones reliquas alterius, & relictum punctum ſit in angulo deinceps contentæ ſub non tangentibus, ducta per diuiſiones linea, producta contrapoſitæ ſectioni coincidet, & ductæ lineæ a contactionibus ad punctum. d. tangent contrapoſitas.

¶ Propoſitio, Duodecima.

SIt hyperbole. e. h. non tangentes vero. n. x. & o. p. & centrum. r. & punctum. d. ſit in angulo qui eſt ſub. x. r. p. & ducantur. d. e. & d. z. ſecantes hyperbolẽ vtraq; ad puncta. b. & contineantur. e. & t. ſub. z. h. & ſit vt. e. d. ad. d. t. / e. c. ad. c. t. vt autẽ z. d. ad. d. h. / z. l. ad. l. h. Demonſtrandum q; quę veniet per. c. & l. Coincidet ſectioni. e. z. & contrapoſitę & quę a contactionibus earum quę ſunt ad. d. tangent ſectiones, ſit autem contrapoſita. b. m. & ex. d. ducantur tangentes. d. m. & d. s. & coniuncta. m. s. Si poſſibile nõ veniat per. c. & l. Sed vel per alterum ipſorũ vel per alterum, veniat prius per. c. & ſecet. z. h. ad. e. eſt igitur vt. z. d. ad. d. h. / e. z. ad. e. h. quod eſt abſurdum ſupponitur. n. vt. z. d. ad. d. h. / z. l. ad. l. h. Si vero non per neutrũ. c. vel. l. venit. m. s. ad. vtraq; e. d. & d. z. Impoſſibile contingit.

℞ ℞ ſolida circularis 4913 m̄ ℞ de ℈ p̄ 6

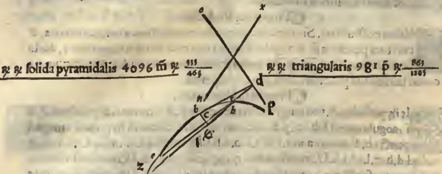


¶ Propoſitio, Decimatertia.

EIſdem exiſtentibus, Si punctum. d. in vna non tangẽtium ſit, & reliqua eadẽ ſint ducta per diuiſiones linea equidiſtans erit non tãgenti in qua eſt punctũ & producta coincidet ſectioni & ducta a contactione ad punctũ tanget ſectionem.

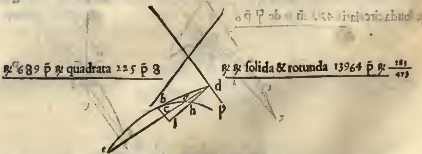
¶ Sit. n. hyperbole & non tangentes & relictum ſit in altera non tangentium. d. & ducantur lineæ & diuidantur vt dictum eſt & ducatur ex. d. tangẽs ſectionem. d. b. Dico q;

ducta ex.b.ad.p.o.veniet per.c.&.l.Si.n.non vel per alterum illorum veniet vel per alterum veniat per ſolum.c.eſt igitur vt.z.d.ad.d.h./z.e.ad.e.h.quod eſt abſurdũ, non igitur ducta ex.b.ad.p.o.per alterum tantum duorum veniet,per vtraq; igitur.



℃Propoſitio,Decimaquarta.

IIſdem exiſtentibus, Si punctum.d.in altera ſit non tangentium &.d.e. quidem ſecet ſectionem ad duo puncta/d.h.vero ad ſolum.h.equidiſtans exiſtens alteri non tangentium & fiat vt.d.e.ad.d.t./e.c.ad.c.t.ponatur autẽ.h.l.in linea equalis.d.h.ducta per.c.&.l.puncta equidiſtans erit non tangẽti & tanget ſectionẽ & quæ a contactione ad.d.ducitur tanget ſectionem, ſimiliter predicto ducens.d.b.tangentem. Dico q; ducta ex.b.ad.p.o.non tangentẽ veniet per puncta.c.&.l.Si igitur per ſolum.c.veniet non erit.d.h.equalis.h.l.quod eſt abſurdum ſi vero per ſolum.l.nõ erit vt.e.d.ad.d.t./e.c.ad.c.t.ſi vero nec per.c.nec per.l.ad vtraq; coincidet quod eſt abſurdum per vtraq; igitur veniet.

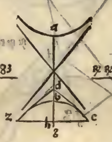


℃Propoſitio,Decimaquinta.

SI in contrapoſitis relictum ſit punctum inter duas ſectiones & ab ipſo hæc quidem tangat vnam contrapoſitarum alia vero ſecat vtranq; contrapoſitarum & vt ſe habet quę eſt inter alteram ſectionem quam non tangit linea, & punctum, ad eam quę eſt inter punctum & alteram ſectionem, Sic ſe habet maior quædam linea q̃ ea quę eſt inter ſectiones ad exceſſum ipſius iacentem in lineaq; & ad idem terminum

eiuſdem rationis, ducta ab extremo maioris lineę ad tactum coincidet ſectioni & ducta a contactione ad relictum punctum tanget ſectionem.

Sint contrapoſitę.a.b.& relictum ſit punctum.d.inter ſectiones intra contentum angulū ſub non tangētibus,& ab ipſo.d.z.ducatur tangens,a.b.d.vero ſecans ſectiones, & quam habet rationem.a.d.ad.d.b.habeat.a.g.ad.g.b. Demōſtrandum q̄ producta ex.z.ad.g.coincidet ſectioni,& ducta a contactione ad.d.tanget ſectionem,qm̄.n.punctum.d.eſt inter angulum continentem ſectionem poſſibile eſt & alteram tangentem ducere ex.d.ducatur.d.e.& cōiuncta.z.e.veniat ſi poſſibile non per.g.ſed per h.Erit vtiq; vt.a.d.ad.d.b./a.h.ad.h.b.quod eſt abſurdum,ſupponitur.n.vt.a.d.ad.d.b./a.g.ad.g.b.



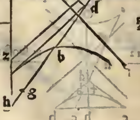
℞ ℞ ſpherica 8888 p̄ ℞ ſolida 483

℞ ℞ ſupfitialis non quadrata 512

Propoſitio, Decimaſexta.

Iſdem exiſtentibus ſit punctum.d.in angulo deinceps contentę ſub non tangentibus & reliqua eadem fiant. Dico q̄ coniuncta ex.z.ad.g.producta coincidet contrapoſitę ſectioni & a contactione ad.d.tanget contrapoſitam ſectionem.

Sint.n.eadem & punctum.d.in angulo deinceps contentæ ſub non tangentibus & ducatur ex.d.tangens ſectionem.a.& coniungatur.e.z.& producta, Si poſſibile non veniet ad.g.ſed ad.h.Erit vtiq; vt.a.h.ad.h.b./a.d.ad.d.b.quod eſt abſurdum,ſupponitur.n.vt.a.d.ad.d.b./a.g.ad.g.b.

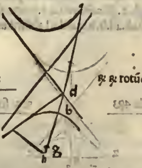


℞ ſolida 5583 p̄ ℞ $\frac{49}{65}$ p̄ $\frac{13}{33}$

℞ ſuperfitialis 7787 p̄ $\frac{45}{55}$

℃ Propoſitio, Decimaſeptima.

Iiſdem exiſtentibus, Sit punctũ.d.in qua iã non tangẽtium, Dico q. ducta ex.z. ad.n.equidiſtans erit non tangẽti in qua eſt punctum. Sint eadem quę ante, punctum autem.d. in vna non tangentium & ducatur per.z.equidiſtans & ſi poſſibile, non cadat ad.g. Sed ad.h.Erit vtiq.a.d.ad.b.d./a.h.ad.h.b.quod eſt abſurdum, ducta igitur ex.z.ad non tangentem ad.g.cadit.



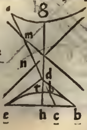
℞ ℞ ſolida q̃drata 13889 p̃ ℞ 43

℞ ℞ rotũda lẽticular 15985 p̃ $\frac{46}{61}$

℃ Propoſitio, Decimaoctaua.

Si in contrapoſitis relictum ſit quodã punctum inter duas ſectiões & ab ipſo duo lineę ducãtur ſecãtes vtraq ſectionũ, & vt ſe habẽt quę ſunt inter vnã ſectionem ad eas quę ſunt inter alterã ſectionẽ & idẽ punctũ ſic ſe habẽt maiores acceptarũ inter cõtrapoſitas ad exceſſus ipſarũ ducta linea p extrema maiorũ linearũ ſectionibus coincidẽt & ductæ lineæ a contactionibus ad relictum punctum tangent lineas.

℃ Sint cõtrapoſitę.a.b.& punctũ.d.inter ſectiões prius ſupponat̃ in ãgulo contẽto ſub nõ tãgẽtibus & p.d.ducãtur.a.b.d.&.g.d.t.igit̃.a.d.maior eſt.d.b.&.g.d./d.t.propterea q.b.n.eqlis eſt.a.m.& quã hẽt rationẽ.a.d.ad.d.b.habeat a.c.ad.c.b.quã ãt habet rationẽ.g.d.ad.d.t.habeat.g.h.ad.h.t.Dico q quę venit p.c.h.coicidet ſectioni & ex.d.ad cõtactiões tangẽt ſectionẽ, qñ.n.d.eſt iter cõtentũ angulũ ſub nõ tangẽtibus poſſibile ex.d.tãgẽtes ducere, ducãtur.d.e.&.d.z.& cõiungat̃.e.z.veniet vtiq p puncta.c.&.h.Si.n.nõ vel p alterũ ipſorũ veniet ſolũ vel p neutrũ, Siquidẽ enim p alterum ipſorum ſolũ altera linearũ in eandẽ rationem ſecabitur ad alterum punctum, quod eſt impoſſibile, Si autem per neutrum ad vtraſq impoſſibile continget.

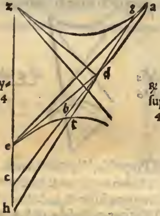


℞ ℞ ſupfitialis nõ quadrata 512

℞ ſupfitialis quadrata 324 m̃ ℞ 16

ℭPropoſitio, Decimanona.

Relictum vtriq; punctum.d.in angulo deinceps contentæ ſub non tangentes & ducantur lineæ ſecantes ſectiones & diuidantur vt dictum eſt; Dico q; producta.c.&.h.coincidet vtriq; contrapoſitarum & ex contactione ad.d.tangent ſectiones. Ducantur enim ex.d.tangentes vtraſq; ſectionum.d.e.&.d.z. Igitur per.e.z. per.c.&.h.veniet. Si.n.non vel per alterum ipſorum veniet vel per neutrum & rurſus ſimiliter ducetur quod eſt abſurdum.



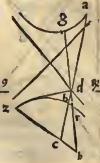
℞ ℞ ſolida triangularis & pyramidalis non ſpherica 494

℞ ℞ de ʒ. ʒ p̄ ℞ ſolida ſuperfitialis & non cuba 4916 p̄ ℞ 886 m̄ 7

ℭPropoſitio, Vigeſima.

SI aũt relictũ punctũ in quodã ſit non tãgentiũ & reliqua fiant eadẽ & per extrema exceſſuũ ducta linea, equidiſtãs erit non tangẽti in qua eſt punctũ & a puncto ad contactionẽ ſectionis & ductę lineę per extrema tanget ſectionẽ.

ℭSint contrapoſitæ.a.b.&.punctum.d.ſit in vna non tangentiũ & reliqua eadem fiant. Dico q; ducta per.c.&.h. coincidet ſectioni & ducta a cõtactione ad.d.tanget ſectionem, ducatur ex.d.tangens.d.z. & ex.z.ad non tangentem in qua eſt.d. ducatur linea veniet per.c.&.h.Si.n.non vel per alterum ipſorum veniet vel per neutrum & eadem abſurda contingent, quæ prius.



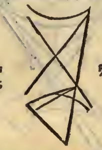
℞ ℞ ſuperfitialis nõ quadrata 489

℞ ℞ ſupfitialis 4816 p̄ ℞ $\frac{4569}{6815}$

Propoſitio, Vigeſimaprima.

Int rurſus contrapoſitę.a.b.& punctum.d.in vna nõ tangentiũ &.d.b.c.ſectioni ad vnum ſolũ punctũ.b.coincidat equidiſtãs exiſtens alteri non tãgentiũ &.g.d.t.vtriq; ſectionum coincidat & ſit vt.g.d.ad.d.t./g.h.ad.h.t.&.b.c.equalis ſit d.b. Dico q; ducta per.c.&.h.puncta coincident ſectioni & equidiſtans erit non tangenti in qua eſt punctum.d.& ducta a contactione ad.d. tangetſectionem, ducatur n.tangens.d.z.& ex.z.ad non tangentem in qua eſt punctum.d.ducatur linea, veniet vtriq; per.c.&.h.Si.n.non, prius dicta abſurda contingent.

℞ ℞ triangularis pyramidalis non rotunda 45889 p̃ 16

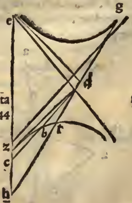


℞ ℞ ſolida quadrata 13863 p̃ $\frac{14}{11}$

Propoſitio, Vigeſimaſecunda.

Int vtriq; contrapoſitæ & non tangentes & punctum.d.relictum ſit in deinceps angulo contentę ſub non tangẽtibus &.g.d.t.ſecans ſectiones &.d.b.equidiſtãs alteri non tangentiũ & erit vt.g.d.ad.d.t./g.h.ad.h.t.&.b.c.equalis.d.b.Dico q; ducta per.h.&.c.coincidet vtriq; contrapoſitarum & ductæ a contactionibus ad.d. tangent contrapoſitas ducantur tangentes.d.e.&.d.z.& coniungatur.e.z.& ſi poſſibile non veniat per.c.&.h.Sed vel per alterum, vel per alterum veniat, Siquidem per.h. ſolum non erit.d.b.equalis.b.c.ſed altera, quod eſt abſurdum. Si vero per ſolum.c. non erit vt.g.d.ad.d.t./g.h.ad.h.t.Sed alia quædam ad aliam ſi vero per neutrum.c. vel.h.vtraq; impoſſibilia contingent.

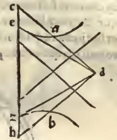
℞ ℞ ſolida ſupficialis nõ quadrata 15589 m̃ ℞ de ℈ ℈ p̃ ℞ 3844 m̃ 15 p̃ ℞ $\frac{1863}{1734}$ p̃ 18 m̃ ℈



℞ ℞ triangularis non ſpherica ſed rotunda 84516

¶Propoſitio, Vigeſimatertia.

SInt rurſus contrapoſitę.a.b.& punctum.d.in deinceps angulo contētę ſub non tangentibus & ducatur.b.d.ſecans ſectionem.b.ad vnum ſolum punctum alteri vero non tangentium equidiſtans, Et.d.a.ſectionē.a.ſimiliter & ſit.d.b.equalis.b.h.&.d.a./a.c.Dico ꝙ ducta per.c.&.h.coincidit ſectionibus, & ductę a contactionibus ad.d.tangent ſectiones ducantur tangentes.d.e.&.d.z.& coniuncta.e.z.ſi poſſibile non veniat per.c.&.h.vel per alterum ipſorum veniet vel per neutrum & vel d.a.non erit equalis.a.c.Sed alię cuidam quod eſt abſurdum vel.d.b.non equalis.b.h.vel neutra,& rurſus in vtriſq; idem abſurdum continget,veniet igitur.e.z.per.c.&.h.

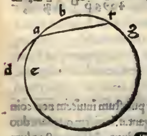


℞ ℞ ſpherica 13988 p̄ 9 m̄ ℞ $\frac{1}{4}$ p̄ $\frac{25}{65}$

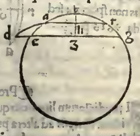
¶Propoſitio, Vigeſimaquarta.

COni ſectioni vel circuli circunferētię nō coincidit coni ſectio ſic,quare pars quidem eſt eadem pars vero non eſt communis.

¶Si.n.poſſibile coni ſectio.d.a.b.g.circuli circunferentię.e.a.b.g.coincidat & ſint eorum cōmunis pars idem.a.b.g.nō cōmunis autē.a.d.&.a.e.& relictū ſit ab ipſis punctū.t.& cōiungatur.t.a.& per cōtingēs punctū.e.ducatur.d.e.g.equidiſtās.a.t.& ſecetur.a.t.in duo ad.h.& per.h.diameter ducať.b.h.z.ducta igitur p.b.ad.a.t.tāget vtrāq; ſectionē,& equidiſtās erit.d.e.g.& erit in altera quidē ſectiōe.d.z.equalis.z.g.in altera vero.e.z.equalis.z.g.quare &.d.z.eſt equalis.z.e.quod eſt impoſſibile.



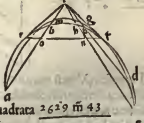
℞ ſolida 49 $\frac{1}{4}$ m̄ ℞ $\frac{93}{104}$ p̄ $\frac{11}{16}$



¶Propoſitio, Vigeſimaquinta.

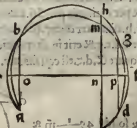
COni ſectio Coni ſectionem vel circuli circunferentiam non ſecat ad plura puncta quattuor.Si.n.poſſibile ſecet ad quinq; ſilicet.a.b.g.d.e.& ſint.a.b.g.d.e.contactiones deinceps nullā omittētes inter ipſas & cōiungatur.a.b.&.g.d.& producātur,coincident vtiq; ipſę extra ſectiones in parabole & hyperbole coincidāt ad.l,

& quam habet rationem.a.l.ad.l.b. habeat.a.o.ad.o.b. quam vero habet rationem.d.l. ad.l.g.habeat.d.p.ad.p.g.Igitur coniuncta ex.p.ad.o.producta in vtrunq; coincidet ſectioni & coniunctę a contactionibus ad.l.tanget ſectiones coincidant vtiq; ad.t.r. & coniungantur.t.l.&.l.r.tangent vtiq; ipſæ, Igitur.e.l.ſecat vtranq; ſectionem, quoniam inter.b.&.g.contactio non eſt,ſecet ad.m.&.h.erit igitur per alteram ſectionem vt.e.l.ad.l.h./e.n.ad.n.h.per alteram autem vt.e.l.ad.l.m./e.n.ad n.m.hoc autem impoſſibile quare & quod a principio,Si.a.b.&.d.g.equidiſtãtes ſint,erunt quidẽ ſectiones defectio vel circuli circunferentia,ſecentur.a.b.&.g.d.in duo ad.o.p.& coniungatur.p.o.& producatur in vtrunq;, Coincident vtiq; ſectionibus coincidat vtiq; ad.t. &.r.erit vtiq; diameter ſectionum.t.r.ducatur ab.e.ad.a.b.&.g.d./e.n.m.h.Igitur.e.m.h.ſecabit.t.r.& vtranq; linearum propterea q; altera contactio nõ eſt ad.a.b.&.g.d. Erit vtiq; per hęc in altera quidem ſectione.n.m.equalis.e.n.in altera vero.n.e.equalis.n.h.quare.n.m.eſt equalis.n.h.quod eſt impoſſibile.



℞ ℞ ſolida ſupfitialis nõ quadrata 2629 m̃ 43

℞ ℞ cubica 16481 p̃ 24



℞ ℞ triangularis & pyramidalis non ſpherica ſed rotunda 9616 p̃ $\frac{16}{36}$

℞ ℞ ſupfitialis non ſolida 4096 p̃ 9 m̃ ℞ $\frac{65}{83}$

b

℞ m̃ $\frac{1}{4}$ ℞ ol ℞

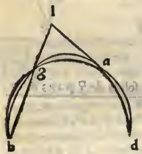
$\frac{11}{}$ q̃ e $\frac{12}{}$

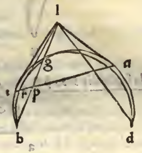
Propoſitio, Vigeſimaſexta.

SI prędictarum linearum quędam ad vnum tangant punctum inuicem non coincidunt ſibiipſis ad altera puncta plura q̃ duo. Tangant.n.inuicem quędam duo dictarum linearum ad punctum.a. Dico q; non coincidunt ad alia puncta plura q̃ duo, Si.n.poſſibile coincidant ad.b.g.d.& ſint contactiones deinceps inuicem nullam inter omittentes & coniungatur.b.g.& producatur & ex.a.ducatur tangens.a.l. & tanget duas ſectiones & coincidet.g.b.coincidat ad.l.& fiat vt.g.l.ad.l.b./g.p.ad p.b.& coniungatur.a.p.& producatur, Coincidet ſectionibus & a cõtactionibus ad.l. tanget

tanget ſectiones producatur, & coincidat ad.t.&.r. & coniungantur.t.l.&.l.z. tāgent vtiq; ipſæ ſectiones, Igitur coniuncta ex.d.ad.l. ſecat vtranq; ſectionum & continget prius dicta abſurda, non igitur ſecant inuicem ad plura puncta q̄ duo, Si autem in de ſectione vel circuli circunferentia.g.b. equidiſtans ſit.a.l. ſimiliter prędicto faciemus demonſtrationem diametrum demonſtrantes.a.t.

℞ ℞ ſolida ſuperfitialis & triangularis 12916 p̄ ℞ $\frac{63}{104}$



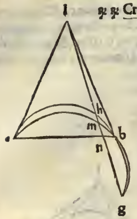


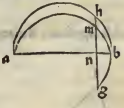
ℭPropoſitio, Vigeſimaſeptima.

SI prædictas lineas quæ iam ad duo puncta tangant inuicem non coincidunt inuicem ad alterum, dico.n. dictarum linearum tangant inuicem ad duo pūcta.a.&.b. Dico q; inuicem ad aliud punctum non coincidunt, Si.n. poſſibile coincidant ad.g. & ſit prius.g. extra.a.&.b. tactus & ducantur ex.a.&.b. tangentes tangent igitur vtraſq; lineas. tangant & coincidant ad.l. vt in prima deſcriptione & coniungatur.g.l. ſecabit vtiq; vtranq; ſectionum, ſecet ad.h.&.m. & coniungatur.a.n.b. Erit igitur in altera quidē ſectione vt.g.l.ad.l.h./g.n. ad.n.h. In altera vero vt.g.l.ad.l.m./g.n.ad.n.m. quod eſt abſurdum, Si autem.g.h. equidiſtans ſit tangentibus ad.a.&.b. puncta vt in deſectione in ſecunda deſcriptione coniungentes.a.b. dicimus, q; diameter eſt ſectionum, quare in duo ſecabitur vtraq;.g.h.&.g.m.ad.n. quod eſt abſurdum, non igitur ad alterum punctū coincidūt lineæ inuicem, Sed ad ſola.a.&.b. Sit vtiq;.g. inter tactus vt in tertia deſcriptione, manifeſtum q; non tangent lineæ inuicem ad.g. ad duo.n. ſolum ſubiiciuntur tangentes, ſecentur igitur ad.g. & ducantur ex.a.&.b. tangentes.a.l.&.l.b. & coniungatur.a.b. & in duo ſecetur ad.z. Igitur ducta ex.l.ad.z. diameter erit, Igitur per.g. non venit. Si.n. veniet ducta per.g.ad.a.b. tanget vtranque ſectionum, hoc autem impoſſibile, ducatur vtiq; ex.g.ad.a.b./g.c.ad.h.m. erit vtiq; in altera ſectione.g.c. equalis.c.h. in altera autem.c.m. equalis.c.g. quare.c.m. equalis.c.h. quod eſt abſurdum, ſimiliter autem & ſi equidiſtantes ſint tangentes ad eadem quæ ſupra impoſſibile demonſtrabitur.

℞ ℞ Cronica ſuperfitialis & ſolida 3888 p̄ ℞ $\frac{224}{343}$

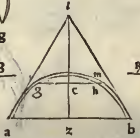
℞ ℞ ſpherica ſolida 5989 p̄ 24





℞ ſolida ſupfitialis 5936 p̄ 8

℞ ſolida de ꝗ p̄ 283 m̄ 17

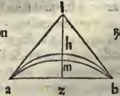


Propoſitio, Vigeſimaoctaua.

PArabole Parabolē non tāget ad plura puncta q̄ vnū, Si.n.poſſibile tangāt.a.h.b.& a.m.b.parabole ad.a.&.b.& ducātur tangētes.a.l.& l.b.tāget vtiq; ipſe ſectiones vtraſq; & coincidēt ad.l.coniungatur.a.b.& in duo ſecetur ad.z.& ducatur.l.z.qm̄ igitur duo lineæ.a.h.b.&.a.m.b.tangent inuicem ad duo.a.&.b.non coincidunt inuicem ad alterum, quare.l.z.vtranq; ſectionem ſecat, ſecetur ad.h.m. Erit vtiq; per alteram ſectionem.l.h.equalis.h.z.per alteram vero.l.m.equalis.m.z.quod eſt impoſſibile, non igitur parabole parabolem tangit ad plura puncta q̄ vnum.

℞ ℞ ſolida & ſuperfitialis non rotunda 144981 p̄ $\frac{15}{63}$

℞ ℞ triāgularis & pyramidalis non ſpherica ſed rotunda 4816 p̄ 4



Propoſitio, Vigeſimanona.

PArabole hyperbolem non tanget ad duo puncta extra ipſam tangens.

Sit Parabole quidem.a.h.b.hyperbole autem.a.m.b.& ſi poſſibile tangant ad.a.&.b.& ducantur ex.a.&.b.tangentes vtranq; ſectionum.a.&.b.coincidentes inuicem ad.l.& coniungatur.a.b.& ſecatur in duo ad.z.& coniungatur.l.z.qm̄ igitur.a.h.b.&.a.m.b.ſectiones ad.a.&.b.tangunt ad aliud non coincidunt igitur.l.z.ad

aliud & aliud ſecat ſectiones ſecet ad.h.&.m.& producatur.l.z.cadet vtiq; ad cẽtrum hyperboles. Sit centrum.d.erit vtiq; per hyperbolem vt.z.d.ad.d.m./m.d.ad.d.l. Et reliqua.z.m.ad.m.l.maior autem.z.d./d.m. Igitur &.z.m.maior.m.l.per parabolem autem.z.h.equalis.h.l.quod eſt abſurdum.

℞ ℞ ſolida ſupfitialis de ℈ p̄ ℞ ℞ 44936 p̄ ℞ 512



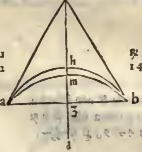
℞ ℞ ligata & ſupfitialis nõ q̃drata 12516 p̄ ℞ de ℈ ℈ m̄ 4096

Propoſitio, Trigeſima.

PArabole defectionem vel circuli circunferentiam non tangent ad duo puncta intra ipſam cadens.

Sit.n. defectio vel circuli circunferentia a.h.b.parabole autẽ.a.m.b.& ſi poſſibile tangant ad duo.a.&.b.& ducantur ex.a.&.b.tangentes ſectiones & coincidentes ad.l.& cõiungatur.a.b.& in duo ſecata eſt ad.b.& coniungatur.l.z.ſecabit vtrãq; ſectionem ad aliud, & ad aliud vt dictum eſt, ſecet ad.h.&.m.& producantur.l.z.ad d.& ſit centrum defectionis vel circuli, eſt igitur per defectionem & circulum, vt.l.d.ad.d.h./d.h.ad.d.z.& reliqua.l.h.ad.h.z.maior autem.l.d./d.h. Igitur & l.h.maior h.z.per parabolem autem.l.m.equalis.m.z.quod eſt abſurdum.

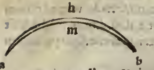
℞ ℞ ſolida 1683 p̄ ℈ m̄ ℞ ℞ ſupfitialis 1484 p̄ ℞ 8783 p̄ 12



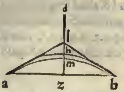
℞ ℞ pyramidalis & circularis 144993 p̄ ℞ de ℈ m̄ ℞ 512

Propoſitio, Trigeſimaprima.

HYperbole hyperbolem idem centrum habentem non tanget ad duo puncta, hyperboles enim.a.h.b.&.a.m.b.habentes idem centrum.d. Si poſſibile tangant ad.a.& b.ducantur autem ex.a.&.b.tangentes ipſas & coincidentes inuicem.a.l.&.l.b.& coniungatur.d.l.& producatur, cõiungatur vtiq; &.a.b.Igitur.d.z.in duo ſecat.a.b.ad.z. ſecabit vtiq;.d.z.ſectiones ad.h.&.m. Erit vtiq; per.a.h.b.hyperbolẽ equale quod eſt ſub.z.d.l.ei quod fit ex.d.h.per.a.m.b.autem quod eſt ſub.z.d.l.equale ei quod fit ex d.m.quod igitur fit ex.m.d.equale ei quod fit ex.d.h.quod eſt impoſſibile.



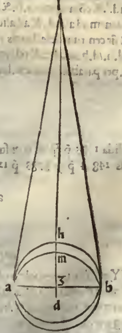
℞ ℞ 4892 p̄ ℞ ligata & circularis 516



ℂ Propoſitio, Trigeſimaſecunda.

SI defectio defectionem vel circuli circunferentiam ad duo puncta tangit idem centrum habens coniungens tactus per centrum cadit, tangant.n.ſe inuicem dictæ lineæ ad.a.&.b.puncta, & coniungatur.a.b.& per.a.&.b.tangentes ſectiones ducantur & ſi poſſibile coincidant ad.l.&.a.b.in duo ſecetur ad.z.& coniungatur l.z.diameter igitur eſt.l.z.ſectionum. Sit ſi poſſibile centrum.d. Erit igitur quod eſt ſub.d.l.z.per alterā ſectionē equale ei quod fit ex.d.h.per alterā autē ſectionē equale ei quod fit ex.m.d.quare quod fit ex.h.d.equale ei quod fit ex.m.d.qđ eſt impoſſibile non igit̃ tāgētes ex.a.b.coincidēt, equidiſtātes igit̃ ſunt & per hoc diameter eſt.a.b. quare per centrum cadit, quod oportebat demonſtrare.

℞ ℞ ſolida circularis rotunda & non ſpherica 15613 m̄ ℞ 83 p̄ 9 m̄ ℞ ſoluta 489 p̄ ℞ ℞ ſuperficialis & circularis 44996 p̄ ℞ $\frac{41}{89}$



ℂ Propoſitio, Trigeſimatertia.

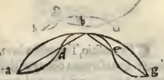
COni ſectio vel circuli circunferentia non habens ad eaſdem partes altitudines non coincidunt ad plura puncta q̃ duo.

ℂ Si.n. poſſibile coni ſectio vel circuli circunferentia.a.b.g.coni ſectioni

vel circuli circunferentiæ a. d.b.e.g.coincidat ad plura puncta q̃ duo non ad eaſdem partes habens altitudines.a.b.g. & coniunctæ.a.b. &.g.b.angulum igitur continent ad eaſdem partes ad quas & concauum.a.b.g.lineæ per eadem igitur.a.b.&.b.g.eundem angulum continent ad eaſdem partes ad quas & concauum.a.d.b.e.g.lineæ, Igitur dictæ lineæ ad eaſdem partes habent concaua & altitudines, quod eſt abſurdum.

℞ ℞ ligata ſoluta ſuperfitialis 2024 p̃ ℞ cuba triangularis 4916

℞ ſpherica 729 p̃ 11/34



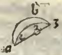
Propoſitio, Trigeſimaquarta.

SI Coni ſectio vel circuli circunferentia coincidat vni contrapoſitarum ad duo puncta & lineæ inter contactiones ad eaſdem partes concaua habent producta linea ad contactiones non coincidit alteri contrapoſitarum.

Sint contrapoſitæ.d.&.a.e.g.z & ſit coni ſectio vel circuli circunferentia:a.b.z. coincidens alteri contrapoſitarum ad duo puncta.a.&.z. & habeant:a.b.z.&.a.g.z.ſectiones ad eaſdem partes concaua, Dico q.a.b.z.linea producta non coincidit.d.coniungatur enim.a.z.& quoniam contrapoſitæ ſunt.d.&.a.g.z.&.a.z.linea ad duo ſecat hyperbolē non coincidit producta.d.cōtrapoſitæ, Igitur neq.a.b.z.linea coincidet.d.



℞ ℞ pyramidalis cronica & circularis non ſoluta 47986 p̃ ℞ 91

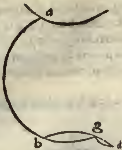


Propoſitio, Trigeſimaquinta.

SI Coni ſectio vel circuli circunferentia vni contrapoſitarum coincidat, reliquæ ipſarum non coincidit ad plura puncta q̃ duo.

Sint contrapoſitæ.a.&.b.& coincidat Coni ſectio vel circuli circunferentia a.b.g.& ſecet contrapoſitam.b.ad.b.&.g. Dico q ad aliud punctum non coincidit b.g.Si.n.poſſibile cadat ad.d. Igitir.b.g.d.coincidit ſectioni.b.g. ad plura puncta q̃ duo non ad eaſdem partes habens concaua quod eſt impoſſibile, Similiter autem demonſtrabitur, Et ſi.a.b.g.linea contrapoſitam tangit.

℞ ℞ ſolida ſupfitialis nõ quadrata 52986 p̃ 24



℞ ℞ ſpherica 43612 f $\frac{11}{41}$

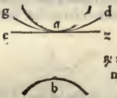
℄Propoſitio, Trigeſimaſexta,

COni ſectio vel circuli circunferentia cõtrapoſitis nõ coincidit ad plura puncta q̃ quatuor manifeſtum autem hoc ex eo quod quę coincidit vni cõtrapoſitarum non coincidit reliquę ad plura puncta duobus,

℄Propoſitio, Trigeſimaſeptima,

SI Coni ſectio vel circuli circunferentia vnam contrapoſitarum tangat concauis ipſius alteri contrapoſitarum non coincidit,

℄Sint contrapoſitæ, a. &, b. & ſectionem, a, tangat, g, d, a, Dico ꝙ, g, a. d. non coincidit, b, ducatur ex, a. tangens, a, e, z. vtranq; vtiq; linearum tangit ad, a, quare non coincidit, b, quare neq;, a, g. d,



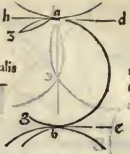
℞ ℞ quadrata ſuperfitialis & ſolida 489 p̃ ℞ $\frac{49}{141}$

℞ ℞ triangularis pyramidalis non rotũda 14689 p̃ ℞ $\frac{241}{491}$

℄Propoſitio, Trigeſimaoctaua,

SI Coni ſectio vel circuli circunferentia vtranq; contrapoſitarum ad vnum tangat punctum, ad aliud non coincidit contrapoſitis,

℄Sint contrapoſitæ . a . & . b. & Coni ſectio vel circuli circunferentia tangat vtranq; . a . & . b. ad. a. & . b, Dico ꝙ, a b. g. linea ad aliud non coincidit ſectionibus. a. & . b. qñ igitur. a. b. g. ſectionem. a. tangit ad vnum coincidens & . b. Igitur ſectionem a, non tanget ad concaua, ſimiliter vtiq; demonſtrabitur ꝙ neq; tangit. b, ducantur. a. d. & . b. e. tangentes ſectiones. a. & . b. Ipſæ vtiq; tangent. a. b. g. lineam, Si. n. poſſibile ſecet altera ipſarum & ſit. a. z. vt igitur & manifeſtum ꝙ ſi. a. b. g. linea coincidit. b, contrapoſitæ non tanget. a, concauis ipſius, demonſtrabitur. n. contrarie, Igitur inter tangentem. a. z. & ſectionem. a. cecidit linea. a. h. quod eſt impoſſibile, tangent igitur a, b. g. & per hoc manifeſtum ꝙ, a, b, g. ad alterum non coincidit contrapoſitis.



℞ ℞ ſolida circularis & pyramidalis 3643 p̄ ℞ de ℥ m̄ ℞ $\frac{324}{496}$

℞ ℞ ſupfitialis nõ ſolida ſed quadrata 14483 p̄ ℞ $\frac{1613}{3843}$

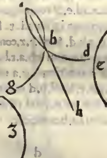
℞ ligata 13798 p̄ ℞ ſolida 512

℞ ſoluta ſuperfitialis 6096

ℭPropoſitio, Trigeſimanona.

SI hyperbole alteri contrapoſitarum ad duo puncta coincidat conuerſas altitudines habens contrapoſita ipſi non coincidit alteri contrapoſitarum.

ℭSint contrapoſitæ.a.b.d.z.& hyperbole.a.b.g.coincidat.a.d.ad.a. &.b.puncta conuerſas altitudines habens concauis, & ſit/e/contrapoſita.a.b.g. Dico ꝙ non coincidet.z.cõiungatur.a.b.& producatur ad.h.qñ igitur linea a.b.h.ſecat hyperbolem a.b.d.producta vtiqꝫ in vtranqꝫ extra ſectionem cadit, quare non coincidit ſectioni.z. ſimiliter vtiqꝫ p.a.b.g.hypbolẽ neqꝫ.e.cõtrapoſitę coincidit, Igitur nec.e.coincidet.z.



℞ ℞ ſolida triangularis 3891 p̄ 4 m̄ ℞ de ℥ ℥ p̄ ℞ 44981 p̄ ℞ 18

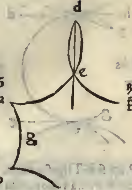
℞ 4916 p̄ ℞ ſolida 394 m̄ ℞ 8899 p̄ ℞ $\frac{3341}{4686}$

ℭPropoſitio, Quadrageſima.

SI hyperbole vtriqꝫ contrapoſitarum coincidat, Ipſi contrapoſita neutri contrapoſitarum coincidit ad duo puncta.

ℭSint contrapoſitæ.a.b.&.a.g.b.hyperbole coincidat vtriqꝫ contrapoſitarum a,&.b.Dico ꝙ contrapoſita.a.g.b.non coincidit ſectionibus.a.&.b.ad duo puncta, ſi n.poſſibile coincidat ad.d.&.e.& coniuncta.d e.producatur, per ſectionem vtiqꝫ.d.e. non coincidit.d.e.linea ſectioni.a.b.per.a.e.d.autem non coincidit.b.per tres.n.locos venit quod eſt impoſſibile, ſimiliter vtiqꝫ demonſtrabitur ꝙ neqꝫ ſectioni.b.ad duo puncta coincidit, per eadem vtiqꝫ neqꝫ tanget vtranqꝫ ipſarum, ducentes.n.tangẽtem t.e.tanget quidem ipſa vtraſqꝫ ſectionum, quare per.d.e.non coincidit.a.g.per.a.e. autem non coincidit.b.quare neqꝫ.a.g.coincidit.b.quod non ſupponitur.

℞ ℞ ſolida & ſupfitialis nõ rotunda 3843 p̄ ℞ $\frac{341}{896}$



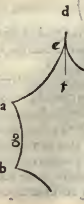
℞ ℞ pyramidalis rotunda 443 p̄ ℞ de ꝗ ꝗ 3615 m̄ ℞ $\frac{393}{443}$

Propoſitio, Quadrageſimaprima.

SI hyperbole vtranq; contrapoſitarum ſecet ad duo puncta conuerſas habens ad vtranq; altitudines contrapoſita ipſi neutri contrapoſitarum coincidit.

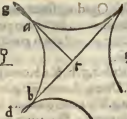
Sint contrapoſitæ.a.&.b.& hyperbole.g.a.b.d. vtranq;.a.&.b.ſecet ad duo puncta conuerſas habens altitudines, Dico q̧.e.z.contrapoſita ipſi neutri.a.&.b.coincidit, Si.n.poſſibile coincidat.a.ad.e.& coniungantur.g.a.&.d.b.& producantur, coincideant igitur inuicem, coincidant igitur ad.t. Erit vtiq;.t.in contento angulo ſub non tangentibus ſectionem.g.a.b.d. & eſt.e.z.contrapoſita ipſius, coniuncta igitur ex.g.ad.t.cadit intra angulum contentum ſub.a.t.b.rurſus quoniam hyperbole eſt.g.a.e.& coincidunt.g.a.t.&.t.e.& contactiones.g.a.non continent.e.punctum.t.erit inter non tangentes ſectionem.g.a.e.& eſt.b.d.contrapoſita ipſius, ducta igitur ex.b.ad t.cadit intra angulum qui eſt ſub.g.t.e.quod eſt abſurdum, Cecidit.n.& in eum qui eſt ſub.a.t.b.non igitur.e.z.alteri.a.b.coincidit.

℞ ℞ ſolida circularis ratunda 4649 p̄ ℞ de ꝗ m̄ ℞ ſolida 439 p̄ ℞ ℞ ſoluta & ſuperfitialis non rotunda 643 p̄ ℞ ℞ 12500 m̄ $\frac{24}{36}$



℞ ℞ triangularis ſolida & pyramidalis 18981 p̄ $\frac{36}{43}$ m̄ ℞ ℞ cubica quadrata 6096 m̄ ℞ ℞ ſpherica 143941 p̄ 4

℞ ℞ ligata 433 p̄ ℞ 600 m̄ 9



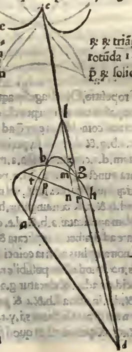
℞ cubica q̄drata 4913 p̄ ℞ $\frac{341}{553}$

℄Propoſitio, Quadrageſimaſecunda.

SI hyperbole vnam contrapoſitarum ad quatuor puncta ſecet, contrapoſita ipſi non coincidit alteri contrapoſitarum.

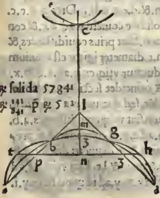
℄Sint cōtrapoſitę.a.b.g.&.d.e. & ſecet hypbole.a.b.g.d.ad quatuor pūcta.a. b.g.&.d.& eſt.e.cōtrapoſita ipſius. Dico q.c.nō coincidit.e. Si.n.poſſibile, coincidat ad.c.& cōiungat.a.b.&.g.d.& pducātur, Coincidēt vtiq; iuicē, Coicidāt ad.l.& q̄ ā hēt rationē.a.l.ad.l.b.hēat.a p.ad.p.b.quā aūt.d.l.ad.l.g./d.r.ad.r.g.pducta igiť per p.&.r.coicidit vtriq; ſectionū & ductę ex.l.ad cōtactiōes tangēt, cōiungať vtiq;.c.l. & pducať, ſecabit vtiq; āgulū q̄ eſt ſub.b.l.g.& ſectiōes ad aliud, & ad aliud pūctū ſecet ad.z.m. Erit vtiq; p.a.t.z.h.&.c.cōtrapoſitas vt.n.c.ad.c.l./n.z.ad.z.l.per.a.b.g.d.āt,&.e.vt.n.c.ad.c.l./n.m.ad.m.l.qd̄ eſt ipoſſibile, nō igiť.e.&.c.coicidūt inuicem.

℞ ℞ cubica quadrata:64 p̄ ℞ ℞ ſolida circularis 4913 m̄ ℞ ℞ de 9 9 44981 p̄ ℞ ℞ cronica ligata & non ſoluta 84941 p̄ ℞ $\frac{49}{81}$ m̄ 24



℞ ℞ triāgularis & pyramidalis nō rotūda 144981 p̄ ℞ de 9 m̄ 24 p̄ ℞ ſolida 4641 m̄ ℞ $\frac{447}{881}$

℞ ℞ ſolida 57841 p̄ ℞ $\frac{141}{341}$ p̄ ℞ 5



℞ ℞ ſoluta 496 p̄ ℞ $\frac{341}{656}$

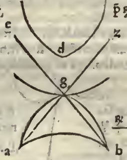
¶ Propoſitio, Quadrageſimatertia.

SI hyperbole vni contrapoſitarum coincidat ad duo puncta ad eaſdem partes habens altitudines quæ ipſa, alteri vero ad vnum punctum, contrapoſita ipſi neutri contrapoſitarum coincidit.

¶ Sint contrapoſitæ.a.b.g. & hyperbole.a.g.b.&.a.b.coincidat ad.a.&.b./g. vero ad vnum.g.& ſit.a.g.b.cotrapoſita.d. Dico q.d.neutri.a.b.g.coincidit, cōiungātur.n./a.g.&.b.g.& producantur, Igitur.a.g.&.b.g.non coincidūt ſectioni.d.Sed neq; ſectioni.g.ad aliud punctum coincidunt preter.g. Si.n.coincidant & ad alterum punctum a.b.contrapoſitæ non coincidunt, ſupponuntur autem coincidentes, Igitur.a.g.&.b.g.lineæ ſectioni quidem.g.ad vnū punctū.g. coincidunt, ſectioni aūt.d.neq; omnino coincidūt, Igitur.d.erit ſub āgulo q eſt ſub.e.g.z.quare ſectio.d.nō coincidit.a.b.g.

℞ ℞ ſuperfitialis non ſolida 148964 p̄ ℞ 729 m̄ ℞ p̄ ℞ circularis pyramidalis non rotunda 19648 m̄ 4

℞ ℞ ſuperfitialis non ſolida 4963 p̄ ℞ ℞ ſoluta 10916 p̄ ℞ ℞ ligata 144881 p̄ 18



℞ ℞ ſolida 15983 p̄ ℞ $\frac{481}{561}$

℞ ligata triangularis 3649

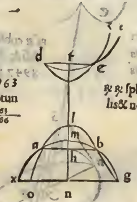
¶ Propoſitio, Quadrageſimaquarta.

SI hyperbole vni contrapoſitarum ad tria puncta coincidat, contrapoſita ipſi alteri contrapoſitarum non coincidit preter q̄ ad vnum.

¶ Sint contrapoſitæ.a.b.g.&.d.e.z.& hyperbole.a.m.b.g.coincidat.a.b.g.ad tria puncta.a.b.&.g.ſit autem.d.e.c.contrapoſita.a.m.&.d.e.z./a.b.g.Dico q.d.e.c.non coincidit.d.e.z.ad plura puncta q̄ vnum, Si.n.poſſibile coincidat ad.d.e.& coniungantur.a.b.&.d.e.vel vtiq; equidiſtantes ſunt, vel non. Sint prius equidiſtantes,& ſecentut.a.b.&.d.e.in duo ad.h.&.t.& coniungatur.h.t.diameter igitur eſt omnium ſectionum & ordinate in ipſam applicatæ.a.b.&.d.e.ducatur vtiq; ex.g.ad.a.b./g.x.n.o.Erit vtiq; & ipſa ordinate ad diametrū applicata & coincidet ſectiōibus ad aliud & ad aliud, Si.n.ad idem, non amplius ad tria coincidūt, ſed quatuor erit quidem in ſectione.a.m.b./g.n.equalis.n.x.quod eſt impoſſibile non ſint vtiq; equidiſtantes.a.b.&.d.e.Sed productæ coincidant ad.p.& ducatur.g.o.ad.a.p.& coincidar.d.p.producta ad.r.& ſecentur.a.b.&.d.e.in duo ad.h.&.t.& per.h.&.t.diametri ducantur.h.s.i.&.t.l.m.s.ex.i.l.m.autem tangentes ſectiones.i.y.t.&.m.y.&.l.t. Erit vtiq;.i.t.ad d.p.&.l.t.&.m.y.ad.a.p.&.o.t.& quoniā eſt vt quod ſit ex.m.y.ad id quod ſit ex.y.i.

quod eſt ſub.a.p.b.ad id quod eſt ſub.d.p.e.Igitur & vt quod fit ex.m.y.ad id quod fit ex.y.i.quod fit ex.l.t.ad id quod fit ex.t.i.per eandem erit vt quod fit ex.y.i.quod eſt ſub.x.r.g.ad id quod eſt ſub.d.r.e.vt autem quod fit ex.l.t.ad id quod fit ex.ꝗ.i.quod eſt ſub.o.r.g.ad id quod eſt ſub.d.r.e.equale igitur quod eſt ſub.o.r.g.ei quod eſt ſub x.r.s.quod eſt impoſſibile.

℞ ℞ ſuꝑfitialis & nõ ſolida 8 8963 p̄ ℞ circularis pyramidalis nõ rotunda 33864 p̄ ℞ ℞ de 9 m̃ ℞ $\frac{163}{586}$



℞ ℞ ſpherica 14949 p̄ ℞ ℞ ſuꝑfitialis & nõ ſolida 127964 p̄ ℞ $\frac{3611}{581}$

Propoſitio, Quadrageſimaquinta.

SI hyperbole alteram quidem tangat contrapoſitarum, alteram autẽ ad duo puncta fecet contrapoſita ipſi neutri contrapoſitarum coincidit.

Sint contrapoſitæ.a.b.g.&.d.& quędã hyperbole.a.b.g.ſecet ad.a.&.b.tangat autem.d.ad.d.& ſit.g.e.contrapoſita ſectionis.a.b.g.Dico q̃.g.e.neutri.a.b.g.vel.d.s.coincidit,Si.n.poſſibile coincidat.a.b.ad.g.& coniungatur.a.b.& per.d.tangens ducatur coincidens.a.b,ad.z.Igitur punctum.z.erit intra non tangentes ſectionem.a.b.d.& eſt.g.e.contrapoſita ipſius ducta igitur ex.g.ad.z.cadet intra angulum contentum ſub.b.z.d.rurſus quoniam hyperbole eſt.a.b.g.& coincidunt.a.b.&.g.z.&.a.b.contactiones non continent.g.punctum.z.eſt inter non tangentes ſectionem a.b.g.& eſt.d.ipſius contrapoſita, ducta igitur ex.g.ad.z.cadit intra ãgulũ qui eſt ſub a.z.g.quod eſt abſurdum,cecidit enim & in eum qui eſt ſub.b.z.d.non igitur.g.e.alteri.a.b.vel.g.d.coincidit.

Propoſitio, Quadrageſimaſexta.

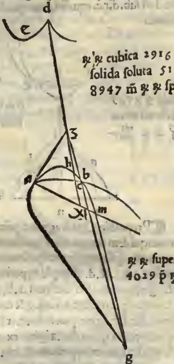
SI hyperbole alteram contrapoſitarum ad vnum quidem tangat ad duo autem coincidit,contrapoſita ipſi contrapoſitæ non coincidit.

Sint contrapoſitæ.a.b.g.&.d.& quædam hyperbole.a.h.g.tangat quidem ad.a.ſecet autem ad.b.&.g.& ſit.e.quædam contrapoſita.a.h.g.Dico q̃.e.non coincidit.d.Si.n.poſſibile coincidat ad.d.& coniungatur.b.g.& producatur ad.z.& ducatur ex.a.a.z.tangens,ſimiliter vtiq; his quæ prius demonſtrabitur,q̃ punctum.z.eſt intra angulum contentum ſub non tangentibus &.a.b.tanget vtraſq; ſectiones, & .d.z.producta ſecabit ſectiones inter.a.&.b.ad.h.&.c.& quam habet rationẽ.g.z.ad.z.b.habeat.g.l.ad.l.b.& coniuncta.a.l.producatur,ſecabit vtiq; ſectiones ad aliud, & aliud

ſecet ad.n.&.m.ductæ igitur ex.z.ad.n. &.m.tangent ſectiones & erit ſimiliter his quæ prius per alteram quidem ſectionem vt.z.d.ad.d.z./x.h.ad.h.z. per alterã autem vt.x.d.ad.d.z./x.c.ad.c.z.quod eſt impoſſibile, non igitur contrapoſita coincidit.

℞ ℞ ſolida ſuperfitialis 8642 p̄ ℞ triangularis & pyramidalis non rotunda ſed quadrangularis 147912 m̄ ℞ cuba 512 p̄ $\frac{35}{48}$

℞ ℞ cubica 2916 m̄ ℞ 383641 p̄ ℞ ſolida ſoluta 513 m̄ ℞ de ℥ p̄ ℞ 8947 m̄ ℞ ℞ ſpherica 11848 p̄ 7



℞ ℞ circularis nõ ſolida ſed ſuperfitialis 729 p̄ ℞ $\frac{143}{346}$

℞ ℞ ſuperfitialis non rotunda 4029 p̄ ℞ 12513 m̄ ℞ $\frac{143}{396}$

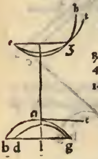
Propoſitio, Quadrageſimaſeptima.

SI hyperbole alteram contrapoſitarum tangens ad alterum ipſi punctum coincidit, cõtrapoſita ipſi alteri cõtrapoſitarũ non coĩcidit ad plura pũcta q̃ vnũ.

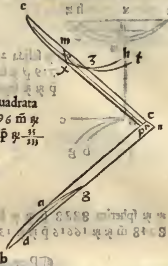
Sint contrapoſitæ.a.g.&.e.z.h.& hyperbole quædam.d.a.g.tangat quidem ad.a.ſecet autem ad.g. & ſit.e.z.t.contrapoſita.d.a.g. Dico q̧ non coincidit alteri contrapoſitæ ad plura puncta q̃ vnum, Si.n.poſſibile coincidat ad duo.e.&.z.& coniungatur.e.z.& per.a.tangens ſectiones, ducatur.a.c.vel equidiſtantes ſunt vel non, Sint prius equidiſtantes & ducatur diameter in duo ſecans.e.z. Veniet igitur per.a.& erit diameter duarum coniunctarum, ducatur per.g.ad.a.c.&.e.z./g.l.b.d. ſecabit igitur ſectiones ad aliud & aliud punctum, Erit in altera.g.l.equalis.l.d.in reliqua.g.l./l.b. hoc autem impoſſibile, non ſit vtiq̧ equidiſtantes.a.c.&.e.z.Sed coincidãt ad.c.&.g.d.ducta ad.a.c.coincidat.e.z.ad.n. diameter autem.o.m. in duo ſecans.e.z.ſecet ſectiones ad.x.&.o.& ducantur tangentes ſectiones ex.x.&.o./x.p.&.o.r. Erit igitur vt quod fit ex.a.p. ad id quod fit ex.p.x.quod fit ex.a.r.ad id quod fit ex.r.o.& per hoc

vt quod

vt quod eſt ſub.d.n.g.ad id quod eſt ſub.e.n.z.qđ fit ex.b.n.g.ad id quod eſt ſub.e.n.z.equale igitur quod eſt ſub.d.n.g.ei quod eſt ſub.b.n.g.quod eſt impoſſibile.



℞ ℞ ſolida ſuperficialis non quadrata 4546 p̄ ℞ cubica q̄drata 4096 m̄ ℞ 147493 p̄ ℞ de 𝔍 m̄ ℞ 10889 p̄ ℞ $\frac{35}{333}$

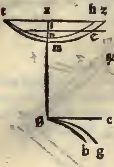


℞ ℞ ſolida triangularis pyramidalis non rotunda 144879 p̄ ℞ ℞ 33 m̄ ℞ ℞ 994619 p̄ ℞ ſuperficialis & ſpherica 284948 p̄ ℞ ℞ $\frac{341}{1896}$

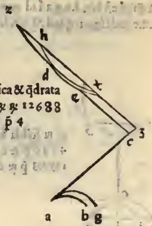
ℭPropoſitio,Quadrageſimaoctaua.

SI hyperbole alteram contrapoſitarum ad alterum punctum tangat, contrapoſita ipſi alteri contrapoſitarum non coincidit ad plura puncta q̄ duo.

ℭSint contrapoſitæ.a.b.&.d.e.h.& hyperbole.a.g.tangat.a.b.ad.a.& ſit.d.e.z.contrapoſita.a.g.Dico q̄.d.e.z.non coincidit ad plura puncta q̄ duo.Si.n.poſſibile ad tria.d.e.t.& ducatur.h.c.a.tangens.a.b.&.a.g.& coniuncta.d.e.producat & ſint prius equidiſtantes.a.c.&.d.e.& ſecetur.d.e.in duo ad.l.& coniungatur.a.l.Erit diameter.a.l.duarum coniunctarum & ſecat ſectiones inter.d.&.e.ad.m.&.n.quare.d.l.e.in duo ſecata eſt ad.l.ducatur ex.t.ad.d.e./t.h.z.Erit quidem in altera ſectione.t.x.equalis.x.z.In altera autem.t.x./x.h.quare &.x.z.eſt equalis.x.h.quod eſt impoſſibile, non ſint vtiq̄.a.c.&.d.e.equidiſtantes,Sed coincidant ad.c.& reliqua eadem fiant, & producta.a.c.coincidat.z.t.ad.r.ſimiliter vtiq̄ demonſtrabimus his quæ prius q̄ eſt vt quod eſt ſub.d.c.e.ad id quod fit ex.a.c.in ſectione quidem.z.d.e.quod eſt ſub z.r.t.ad id quod fit ex.r.a.In.h.d.e.autē quod eſt ſub.h.r.t.ad id quod fit ex.r.a.quod igitur eſt ſub.h.r.t.equale ei quod eſt ſub.z.r.t.quod eſt impoſſibile, non igitur.d.e.z.coincidit.d.e.h.ad plura puncta q̄ duo.



℞ ℞ ſolida 2616 m̃ ℞ ℞ cubica & q̃drata 729 p̃ ℞ ſoluta de ꝯ ꝯ m̃ ℞ ℞ 12688 p̃ ℞ ℞ ſuperficialis 84983 p̃ 4



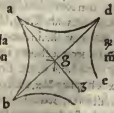
℞ ℞ ſpherica 8888 p̃ ℞ ℞ ſoluta 980816 p̃ ℞ ℞ cubica quadrata 8048 m̃ ℞ ℞ 16616 p̃ ℞ ℞ 13842 m̃ ℞ ℞ ſuperficialis 8943 p̃ $\frac{48}{63}$

¶Propoſitio, Quadrageſimanona.

SI hyperbole vtranq; contrapoſitarum tangat contrapoſita ipſi neutri contrapoſitarum coincidit.

¶Sint contrapoſitæ.a.&.b. & hyperbole.a.b. vtranq; ipſarum tangat ad.a.& b.contrapoſita autem ipſi ſit.d.e. Dico q.e.neutri.a.&.b.coincidit. Si.n.poſſibile coincidat ſectioni.a.ad.d.& ducantur ex.a.&.b.tangentes ſectiones, coincident vtiq; inuicem intra non tangentes ſectionem.a.b.coincidant ad.g.& coniungatur.g.d. Igitur g.d.erit in loco qui eſt inter.a.g.&.b.g. Sed & inter.b.g.&.g.z.quod eſt abſurdum, non igitur.e.coincidit.a.&.b.

℞ ℞ ſupſitialis 1213 p̃ ℞ ℞ ſolida quadrangularis & pyramidalis non rotunda 12516 p̃ ℞ ℞ 4096



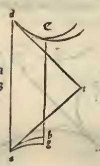
℞ ℞ cubica quadrata 1600 m̃ ℞ ℞ pyramidalis rotunda 15894 p̃ ℞ ℞ $\frac{343}{899}$

¶Propoſitio, Quinquageſima.

SI vtraq; contrapoſitarum ad vnum tangat ad eadem habens concaua non coincidit ad alterum punctum tangant n.ſe inuicem contrapoſitæ ad.a.&.d.puncta. Dico q; ad aliud punctũ non coincidunt. Si.n.poſſibile coincidát ad.e.q̃ñ igitur

hyperbole altera contrapoſitarum tangens ad.d.coincidit ad.e.Igitur.a.b. non coincidit.a.g.ad plura puncta q̃ vnum ducantur ex.a.&.d.ſectionibus tangentes.a.t.&.t.d. & coniungatur.a.d.& per.e.ad.a.d.ducatur.e.b.g.& ex.t.diameter ſecunda ducatur contrapoſitarum.t.c.l.ſecabit vtiq;.a.d.in duo ad.c.Igitur & vtraq;.e.b.&.e.g.in duo ſecata eſt ad.l.Igitur.b.l.equalis.l.g.quod eſt impoſſibile, non igitur coincidunt ad aliud punctum.

℞ ℞ ſolida ſuperfitialis non rotunda ſed quadrangularis non pſecta 583



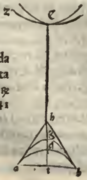
℞ ℞ ſuperfitialis non ſolida 3999 m̄ ℞ de ꝗ ꝗ p̄ 46

¶Propoſitio, Quinquageſimaprima.

SI hyperbole alteri contrapoſitarum ad duo puncta tangat, contrapoſita ipſi alteri contrapoſitarum non coincidit.

¶Sint contrapoſitæ.a.d.&.b.e.& hyperbole.a.g.tangat.a.d.b.ad duo puncta a.&.b.& ſit.z.contrapoſita.a.g.Dico q;.z.non coincidit.e.Si.n.poſſibile coincidat ad e.& ducantur ex.a.&.b./a.h.&.b.h.tangentes ſectiones & coniungatur.a.b.&.e.h.& producatur, ſecabit vtiq; ad aliud & aliud punctum ſectiones, Sit vtiq; vt.e.h.g.d.t. q̃n igitur tangunt.a.h.&.h.b.&.a.b.coniungit tactus, erit in altera coniugatione vt t.e.ad.e.h./t.h.ad.d.h.in altera autem.t.g.ad.g.h.quod eſt impoſſibile, non igitur z.coincidit.e.

℞ ℞ ſolida triangularis non rotunda ſed pyramidalis 14986 p̄ ℞ ℞ ligata 3 2969 p̄ ℞ ℞ ſpherica 841 m̄ ℞ de ꝗ p̄ ℞ ℞ 73899 m̄ ℞ ℞ 3641



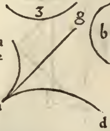
℞ ℞ ſuperfitialis nõ ſolida 3879 p̄ ℞ cõgruẽte 4616 m̄ ℞ ℞ de ꝗ ꝗ p̄ ℞ ℞ cubica q̃drata 64 m̄ ℞ ℞ 48 $\frac{147}{196}$

¶Propoſitio, Quinquageſimaſecunda.

SI hyperbole alteram contrapoſitarum tangat conuerſas habens altitudines contrapoſita ipſi alteri contrapoſitarum non coincidit.

¶Sint contrapoſitæ.a.&.b.& ſectionem.a.tangat hyperbole quædam.a.d.ad.a. Sit autem.b.z.cōtrapoſita.a.d. Dico q̧.z.nō coincidit.b.ducatur ex.a./a.g. tangens ſectiones, Igitur.a.g.per.a.d.non coincidit.z.per.a.autem non coincidit.b.quare.a.g.cadit inter.b.&.z.ſectiones & manifeſtum q̧.b.non coincidit.z.

℞ ℞ circularis 4995 p̄ ℞ ℞ cubica 4096 m̄ ℞ de ℥ p̄ ℞ ℞ ligata 512



℞ ℞ pyramidalis rotunda 12631 p̄ ℞ ℞ ſoluta 491

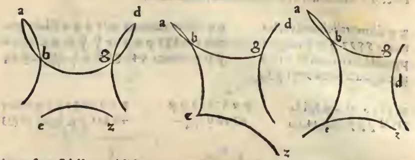
¶Propoſitio, Quinquageſimatertia.

COntrapoſitæ contrapoſitas non ſecant ad plura puncta q̄ quatuor.

¶Sint.n.contrapoſitæ.a.b.g.d.&.e.z.& ſecet prius.a.b.g.ſectio vtranq̧.a.b.&g.d.ad quatuor puncta.a.b.g.&.d.conuerſas habens altitudines vt in prima deſcriptione, Igitur contrapoſita.a.b.g.d.ideſt.e.z.neutri.a.b.&.g.d.coincidit.Sed.a.b.g.d.ſecat.a.b.ad.a.&.b.&.g.d.ad vnum.g.vt in ſecunda deſcriptione, Igitur.e.z.non coincidit.g.Si autem.e.z.coincidit.a.b.ad vnum ſolum coincidit, Si.n.ad duo coincidit.a.b.contrapoſita ipſi.a.b.g.alteri contrapoſitæ.g.non coincidit, ſupponitur autem ad vnum ſolum.g.coincidens, Si vero vt ſe habet in tertia deſcriptione.a.b.g.ſecat.a.b.e.ad duo.a.&.b./e.z.vero coincidat.a.b.e.non coincidet.d.Coincidens vero.a.b.e.non coincidit ad plura puncta q̄ duo, Si vero vt ſe habet in quarta deſcriptione a.b.g.d.vtranq̧ ſecat ad vnum punctum.e.z.neutri coincidit ad duo puncta, quare per prædicta & conuerſę ipſarum.a.b.g.&.d.g.z. contrapoſitis.b.e.&.e.z. ſectionibus non coincidunt ad plura puncta q̄ quatuor, Si vero ſectiones ad eadem habeant concaua & altera alteram ſecat ad quatuor.a.b.g.&.d.vt in quinta deſcriptione.e.z.alteri non coincidit, neq̧.e.z.coincidit.a.b./rurſus enim erit.a.b.coincidens.a.b.g.d.&.e.z.contrapoſitis ad plura puncta q̄ quatuor, Sed neq̧.g.d.coincidet.e.z.Si autem vt ſe habet in ſexta deſcriptione.a.b.g.d.alteri ſectioni coincidat ad tria puncta.e.z.alteri ad vnum ſolū coincidit & in reliquis eadē quę prius dicimus, qñ igitur ſecūdum omnes poſſibiles diſtinctiones manifeſtum eſt prius dictum, contrapoſitæ contrapoſitis non coincidunt ad plura puncta q̄ quatuor.

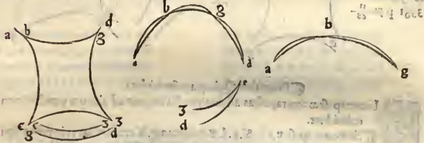
℞ ℞ ſolida pyramidalis ſpherica 33391 p̄ ℞ ℞ ligata 14926 m̄ ℞ ℞ ſoluta 144999 p̄ ℞ ℞ crenic. $\frac{151}{490}$

℞ ℞ cubica quadrata de ꝗ ꝗ 14899 p̄ ℞ ℞ nō q̄drata ſed cubica cōgruente 384843 p̄ ℞ ℞ circularis 843915



℞ ℞ ſupe ficialis non ſolida 512 m̄ ℞ ℞ cubica quadrata 64 p̄ ℞ ℞ de ꝗ ꝗ 42694 p̄ ℞ ℞ 8096 m̄ ℞ cuba 14973 p̄ ℞ ℞ ligata 143531 p̄ 7

℞ ℞ congruente ſpherica ſuperfitialis & non ſolida 1444969 p̄ ℞ ℞ de ꝗ m̄ 33 p̄ ℞ ℞ diametralis 1263 p̄ ℞ ℞ $\frac{1141}{3393}$ p̄ 4



℄ Propoſitio, Quinquageſima quarta.

SI contrapoſitæ contrapoſitas ad vnum punctum tangant, non coincidunt ad alia puncta plura q̄ duo.

℄ Sint contrapoſitæ.a.b.&.b.g.& alteræ.d.&.e.z.&.b.g.d.tangat.a.b.ad.b.& habeat conuerſas altitudines, & cadat prius.b.g.d.ad duo puncta.g.&.d.vt in prima figura, qm̄ igitur.b.g.d.ad duo ſecat conuerſas habens altitudines.e.z non coincidit a.b.rurſus quoniam.b.g.d.tangit.a.b.ad.b.conuerſas habens altitudines.e.z.non coincidit.g.d.Igitur.e.z.neutri.a.b.&.g.d.ſectionum coincidit, Igitur ad duo tantum g.&.d.coincidunt, Sed.b.g.ſecet.g.d.ad vnum punctum.g.vt in ſecunda figura, Igitur.e.z.non coincidit.g.d.coincidit autem.a.b.ad vnum ſolum: Si non e z.coincidat ad duo.a.&.b.b.g.d.non coincidit.g.d.Supponitur autem coincidens ad vnum, Si ve

ro.b.g.ſectioni.d.non coincidat vt in tertia figura per prędicta.e.z. non coincidit.g.d. Et.e.z.non coincidit.a.b.ad plura puncta q̄ duo, Si autem ſectiones ad eadē habeant concaua, eædem demonſtrationes congruunt: ſecundum omnes igitur poſſibiles diſtinctiōes manifeſtum eſt ex demonſtratis prius dictum.

℞ ℞ diametralis linealis & lateralis 5597 p̄ ℞ ℞ congrua pyramidalis nō rotūda 512 p̄ ℞ ℞ ligata & ſoluta 9984 p̄ 36

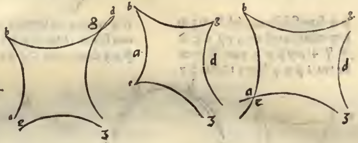
℞ ℞ cubica quadrata 6625 p̄ ℞ ℞ ſolida ſpherica 114983 p̄ ℞ ℞ de ʒ ʒ m̄ ℞ ℞ 9684 p̄ ℞ ℞ cronica 44881 m̄ ℞ ℞ $\frac{14641}{34341}$ p̄ 18

℞ 3866 m̄ ℞ ℞ ſolida 12583 p̄ ℞ ℞ cuba 14600

℞ ℞ 43943 p̄ ℞ 6349 p̄ $\frac{141}{384}$

℞ ℞ 184879 p̄ ℞ ſoluta 44811 p̄ ℞ ligata 59833

℞ ſpherica 3681 p̄ ℞ $\frac{11}{65}$



Propoſitio, Quinquageſimaquinta.

SI contrapoſitæ contrapoſitas ad duo puncta tangant ad alterum punctum non coincidunt.

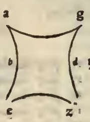
Sint contrapoſitæ, a.b. & .g.d. & reliquæ.a.g. &.e.z.& prius vt in prima figura ad.1.&.g.qñ igitur.a.g.tangit vtranq;.a.b. &.g.d.ad.a. &.g.puncta, Igitur.e.z. neutræ.a.b. &.g.d.coincidit, tangant vtiq; vt in ſecunda, ſimiliter vtiq; demonſtrabimus q.g.d.nō coincidit.e.z.tāgat vt in tertia figura.g.a.quidem.a.b.ad.a. &.d./e. z.ad.z.qñ igitur.a.g.tangit.a.b.conuerſas habens altitudines.e.z.non coincidit.a.b. rurſus quoniam.z.d.tangit.e.z./g.a.non coincidit.d.z.Si autem.a.g.tangat.a.b.ad.a. &.e.g./g.d.ad.g. & habeant concaua ad eadem vt in quarta figura ad alterum non coincidit, neq;.e.z.coincidit.a.b. ſecundum omnes igitur poſſibiles diſtinctiones manifeſtum eſt ex demonſtratis prius dictum.

℞ ℞ cubica quadrata congrua 88681 p̄ ℞ ℞ ſolida triangularis pyramidalis non ſpherica 284992 p̄ 48

℞ ℞ ſuperfitialis non ſolida 4667 p̄ ℞ ℞ ſpherica de ʒ ʒ p̄ ℞ ℞ 95916 m̄ ℞ ℞ pyramidalis 5432 m̄ ℞ de vn cubo p̄ ℞ 63

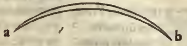
℞ ℞ diametralis q̄ irrãgularis 15987 p̄ ℞ ℞ ſpherica 493 ℞ ℞ ſolida nõ quadrata 2223 p̄ ℞ ℞ 184913 ℞ ℞ ſuperfitialis non ſolida 3914 p̄ ℞ de vn cubo m̄ 15



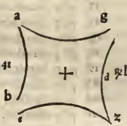


℞ cubica 493 p̄ ℞ ℞ ſolida 516

℞ ℞ linea ꝑpẽdicularis 416 ℞ ſolida 243 p̄ ℞ $\frac{49}{73}$







℞ ℞ ſolida 4841

℞ ligata ſoluta 1239 p̄ ℞ ℞ ſpherica 12716 p̄ 4



℞ ℞ ſuperfitialis nõ ſolida 2644 p̄ ℞ ℞ congruente pyramidalis 512 m̄ ℞ ℞ perpẽdicularis non ſoluta 144735 m̄ ℞ ℞ 11421

℞ ℞ ligata 496 p̄ ℞ ℞ perfecta ſpherica 149688 m̄ ℞ rotunda 47939 p̄ ℞ ℞ de 9 m̄ ℞ 491 p̄ ℞ pyramidalis ſolida 4444

¶Explicit Liber Quartus, Totiusq; Voluminis Opera.

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Omnes ſunt Terni.

Impreſſum Venetiis Per Bernardinum Bindonum, Mediolanēſ. Ad Inſtantiam Magnifici Domini Ioannis Mariæ Memmi Patritii Veneti, Ipſiuſq; Impenſa. Anno a Natiuitate Domini Noſtri,
M. D. XXXVII.

